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Thesis

ASSOCIATIONAL READING ABILITIES OF THE SEVENTH GRADER

Submitted by

Avis G. Marden

(Ed. B., Rhode Island College of Education)

Providence, Rhode Island, 1933

In partial fulfillment of requirements for

the degree of Master of Education

1941

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CHAPTER I

INTRODUCTION

Purpose of the Study

Purpose of investigation the measurement of associational reading.-- The purpose of this investigation is to measure the extent to which the "average" seventh grader practises spontaneous associational thinking while reading in the social studies field and to determine in how far growth in power would result from directed teaching of this associational reading. That every individual does associational thinking is shown by the utilization of whatever concepts lie within his first-hand or vicarious experience in meeting a new situation. That every reader does associational reading is evidenced by his spontaneous use of experimental knowledge in the interpretation of new symbols and concepts.

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Children's failure to think associatively while reading.-- Through repeated contacts with seventh grade pupils endeavoring to cope with the social studies curriculum the writer had opportunity to

discover their failure to apply experimental knowledge to new learning situations. It is assumed that spontaneous mental association is of prime importance in reflective thinking and that such mental association when applied to the printed page greatly enhances its understanding. Thus arose the problem: What ability does the seventh grader possess in the field of spontaneous associational reading? In how far can purposeful teaching increase this skill?

Assumptions Concerning the Problem

Definition of terms.-- Before setting out to further delimit the problem it may be well to state briefly certain assumptions. First, there is the matter of definition of terms which need clarification, terms which will be used repeatedly throughout the study.

Associational thinking is the concept underlying "associational reading." It includes that type of thought process in which the learner utilizes whatever ideas within his experiential background show relationship to a problem which has arisen. That is to say, the individual, confronted by a new situation, analyzes the situation, and to interpret

or enrich this experience brings into play any past learnings which seem related. A classic example of application of associational thinking is found in Dewey's 1/ interpretation of reflective thinking. In analyzing a complete act of thought he lists five steps, the third closely resembling associational thinking. To quote from this discussion, "The third factor is suggestion. The situation in which the perplexity occurs calls up something not present to the senses. ... Suggestion is the very heart of inference; it involves going from what is present to something absent." Associational thinking is not inference, but the bringing of a related "something which is absent" to play upon that "something which is present" is the essence of associational thinking.

Associational reading is really associational thinking as an end result, the stimulation for the association being the interpretation of the printed word. It includes any type of reading which utilizes the learner's experiential knowledge to clarify or enrich the selection being read. Such reading is very

1/ John Dewey, How We Think, D.C. Heath & Co., Boston, 1910, pp. 74-75.

comprehensive in that it comprises a sum total of a variety of types. These might include: (1) critical analysis by comparison of two selections; (2) enrichment through visual or other sensory imagery; (3) enrichment by comparison of past and present conditions, and the like.

Spontaneous application of experiential knowledge can best be defined by breaking the expression down into its elements. To quote Webster, "spontaneous" means "proceeding from internal impulse, not external force." Spontaneous application is the voluntary use of internal force. "Experiential knowledge" includes understandings derived from two sources, first-hand experience and vicarious learning. Thus the expression "spontaneous application of experiential knowledge" when applied to associational reading means voluntary use of all those understandings which lie in immediate reach of the individual. In Dewey's[1] definition of education the expression is well described: "It is that reconstruction or reorganization of experience which adds to the meaning of experience, and which increases the ability to direct

1/ John Dewey, Democracy and Education, MacMillan Co., New York, 1916, p. 87.

the course of subsequent experience."

The interpretation of new symbols and concepts is a major factor in the reading process. Even the beginner must learn to associate sound and meaning with the printed symbol. Judd[1] claims a reader makes association (1) of sensory reaction to such words as "green" or "automobile", (2) of physical reaction to such phrases as "climb a tree", and (3) of mental attitude toward words like "home" or "school". In this study "new symbols and concepts" refer to the written forms for new and unfamiliar ideas which are interpreted by association of familiar ideas.

Directed teaching refers to the teaching-learning cycle through which the learner is taught exactly what is meant by associational reading, why it is done, and how he himself may gain skill in its use.

Average seventh grader includes the 68 per cent who fall within the standard deviation of a normal curve of a seventh grade group. In this study it refers to those pupils who are able to read with some facility the social studies textbooks prepared for use

1/ Charles H. Judd, Educational Psychology, Houghton-Mifflin Co., Boston, 1939, p. 166.

in the first year of a junior high school.

Seventh grader's ability to read and think associatively.-- Secondly is the assumption that the seventh grader is able and ready to do associational thinking and reading. Wrightstone[1] says, "Long before the child starts to school he begins to reason from the data at hand.... Even his attempts to solve personal problems through trial and error represent the basic raw material of the thinking process. ... Throughout the grades of the elementary school it is an obligation of the teachers to help the pupils develop their powers to recognize problems; to find, select, and reject evidence bearing upon these problems; to organize facts and information; to weigh the evidence, to draw conclusions, or to render judgments and to test their conclusions." If this is true of the preschool child, certainly it is right to expect that he shall be able after his elementary training to apply associational thought to the printed page.

Neglect in the teaching of associational reading in social studies.-- Third is the assumption that

1/ Wayne Wrightstone, Appraisal of Newer Elementary School Practices, Bureau of Publications, Teachers College, Columbia, 1938, p. 124.

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1/ Wayne Weightstone. Appraisal of Newer Elementary School Practices. Bureau of Publications. Teachers College, Columbia, 1938. p. 124.

associative reading, a requisite for acceptable behavior in society, has been neglected in the teaching of the social studies. To quote Cox[1], "... but too frequently the social studies tend rather to inculcate docile acceptance of socially approved fictions and mind-biases than to promote intellectual curiosity and independent judgments." He continues[2], "... There are few final 'rights' and 'wrongs'. Socially intelligent adults deal with current problems and draw tentative conclusions. They seek the opinions and follow carefully the arguments of writers and speakers who are peculiarly well qualified to deal with the questions but who differ in their judgments. They suspend their own judgments and modify them from time to time. But seldom up to the present time have our schools dealt effectively with the problem at all."

Previous Research in the Field

Slight research to associational reading in the social studies.-- Before undertaking the investigation of the problem herein stated it was necessary to learn

1/ Philip Cox, The Junior High School and Its Curriculum, Charles Scribner's Sons, Boston, 1929, pp. 17-18.

2/ Ibid, pp. 57-58.

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1/ Public Cox. The Junior High School and Its Curriculum, Charles Scribner's Sons, Boston, 1926, pp. 17-18.

2/ Ibid, pp. 87-88.

what had been done by others in this field. Search revealed no investigation which showed a direct relationship to this study. However, several authorities in the field of reading and in that of the social studies have expressed their belief in the value of associational thought to the reader.

Authorative statements concerning the value of this type of reading to the pupil.-- Harrison[1] enumerates six causes of failure in reading that can be remedied by a program to that purpose. Two of these are "facility in the use of ideas in problematic thinking" and "ability to carry a wide span of ideas in memory". Placing emphasis upon the need for varied first-hand experiences plus increased vicarious experiences, she states that meaningful reading requires recognition of this factor and application of this recognition in every day life.

Hovious[2] carried on an informal investigation with high school pupils in an effort to determine the place of reading in the language arts program. The

1/ M.L. Harrison, "Principles for Increasing the Readiness to Read," National Elementary Principal, Seventeenth Yearbook, (July, 1938), Vol. XVII, No. 7, pp. 264-265.

2/ Carol Hovious, "Reading in a Language Program," English Journal, High School Edition, Vol. 27, No. 10, Dec., 1938, p. 833.

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[1] M.L. Harrison, "Principles for Increasing the Reading to Read," National Elementary Principal, Seventeenth Yearbook, (July, 1938), Vol. XVII, No. 7, pp. 284-288.

[2] Carol Bovina, "Reading in a Language Program," English Journal, High School Edition, Vol. 27, No. 10, Dec., 1938, p. 833.

author states, "pupils were reading flash bits from faraway places. The project had begun in an experiment in rapid association. Every teacher has been bewildered and baffled by the pupils' failure to correlate the things he already knows with the things he is just learning." At the close of the experiment she writes, "Egypt was thus no longer a mere string of letters on the page; it became a word rich in associated meaning." Although the investigation gave no statistical data it does show that concentrated effort to recollect facts after the reading has been done insures some associational power.

Pennell [1] defines reading as a thought-getting process and states, "Meaning cannot be secured or stimulated through printed symbols unless the child brings to that material similar experiences gained either directly or indirectly." The author[2] continues with the statement,"... Teachers must be more and more concerned with the building up of experiences from which various concepts or meanings are built up."

1/ M. Pennell, "Early Reading as a Thought-Getting Process", National Elementary Principal, Seventeenth Yearbook, Vol. XVII, No. 7 (July, 1938), p. 291.

2/ Ibid, p. 292.

Woody[1] not only stresses the importance of experiential knowledge, but insists that "in the average classroom poor achievement in reading... is conditioned by the pupils' lack of experience connected with the things about which he is reading or by his failure to connect whatever experiences he may have had with whatever material he is attempting to read." He states that the teacher's major problem is to give experience in reading whereby the reader will connect his background with the written symbol. Although his study gives no statistical data, he suggests that his findings dictate the need for further research into the problem of free association in the reading process.

Wright[2] in describing the nature and character of reading readiness recognizes that "Reading is psychologically a very complex process that requires the ability to do abstract and ideational thinking. Champlin[3] is in agreement, for he writes, "Successful reading involves a constructive give and take between the mind

1/ Clifford Woody, "Attempts at Measurement of Meaningful Experience Conditioning Achievement in Reading, Peabody Journal of Education, Vol. 16 (November, 1938), pp. 180-191.

2/ W.W. Wright, Nature and Measurement of the Reading Process, National Elementary Principal, Seventeenth Yearbook, Vol. XVII, No. 7 (July, 1938) p. 250.

3/ C.D. Champlin, Two-Way Reading, Journal of Education, Vol. 121, (November, 1938) pp. 266-267.

of the reader and the message of the writer." He describes reading as a "two-way process" and emphasizes, "It is impossible to overstate the value of extensive reading in a democracy.... The citizens of a free society must pursue the practice of reading from childhood to the end of life." His message for the teacher of social studies is reiterated again and again in his analysis. He claims tolerance and justice, necessary attributes of citizens of a democracy can be developed best through the two-way reading process which "capitalizes previous experiences and present understanding." He concludes", ... and it involves that continuous flow of cerebration that is associated with native intelligence performing at its best level of operation. Democracy seeks to bring out and to develop the ultimate potential accomplishment of every individual..."

Davis[1/] agrees with Champlin and places the responsibility upon the teacher. He writes that earlier instruction "failed to develop within the learner the ability to see any relations between the social studies in school and real life situations... Teachers have the

1/ W.R. Davis, The Teacher of the Social Studies, The Social Studies, Vol. XXXI, No. 1 (January, 1940) p. 20, 21.

[1] W.H. Davis, The Teacher of the Social Studies, The Social Studies, Vol. XXXI, No. 1 (January, 1940) p. 30, 31.

ability to think and reason... Thinking may be defined as seeing relations between things." Stolzenberg[1] in studying failures in the social studies field lists among other causes "an absence of the habit to carry over knowledge from other subjects to the social studies."

Delimitation of the Problem

Formulation of the major problem of this study.-- These authoratative statements led the writer to the formulation of the major problem of investigation in this study, namely: With what facility does the "average" seventh grader practice spontaneous associational thinking as he reads in the social studies field?

Formulation of the correlating problems of this study.-- Delimitation of the problem presented the following sub-problems for investigation:

(1) What specific abilities are employed in the associational reading done by a seventh grader in the social studies field?

(2) What has been done to measure these abilities?

(3) What further can be done to measure these abilities?

1/ B. Stolzenberg, A Study of Failures in the Social Studies, The Social Studies, Vol. XXIX, No. 8 (December, 1938) p. 349.

[1] S. Stouffenberg. A Study of Failures in the Social Studies. The Social Studies. Vol. XLIX, No. 8 (December, 1958) p. 346.

(4) From the specific abilities analyzed in (1) what three abilities should this investigation undertake to study?

(5) Using the data of (4) what exercises can be devised for measuring these specific abilities of the seventh grader?

(6) What deficiencies are found in the ability of the "average" seventh grader to "practice spontaneous associational thinking as he reads in the social studies field?"

(7) What relationship exists between sex differences and these deficiencies?

(8) What relationship exists between level of intelligence and these deficiencies?

(9) What teaching program can be devised to improve the conditions found in (5)?

(10) What gain if any is made in the development of power to practice spontaneous associational thinking as the seventh grader reads in the social studies field?

Description of Procedure

The investigation of the major problem and its related sub-problems followed this procedure:

(4) From the specific abilities analyzed in (3) what three abilities should this investigation undertake to study?

(5) Using the data of (4) what exercises can be devised for measuring these specific abilities of the seventh grader?

(6) What deficiencies are found in the ability of the "average" seventh grader to "practice spontaneous associational thinking as he reads in the social studies field?"

(7) What relationship exists between sex differences and these deficiencies?

(8) What relationship exists between level of intelligence and these deficiencies?

(9) What teaching program can be devised to improve the conditions found in (8)?

(10) What gain if any is made in the development of power to practice spontaneous associational thinking as the seventh grader reads in the social studies field?

Description of Procedure

The investigation of the major problem and its related sub-problems followed this procedure:

(1) Breaking down the process of associational reading into the specific abilities used with social studies literature.

(2) By documentary analysis discovering what has been done to measure associational reading ability in the seventh grader.

(3) By documentary analysis discovering what has been done to train these abilities.

(4) Determining which abilities from the group discovered in (1) shall form the basis of this investigation.

(5) Building an original test to measure these specific abilities.

(6) By normative-survey determining what conditions exist in the use of spontaneous associational thinking as the seventh grader reads in the social studies field.

(7) By statistical computation discover what if any significant data are to be found in (6).

SUMMARY

From the foregoing it is apparent that this study has a two-fold purpose:

(1) Breaking down the process of associational reading into the specific abilities used with social studies literature.

(2) By documentary analysis discovering what has been done to measure associational reading ability in the seventh grader.

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(7) By statistical computation discover what if any significant data are to be found in (6).

SUMMARY

From the foregoing it is apparent that this study has a two-fold purpose:

(1) To measure the extent to which the "average seventh grader practices spontaneous associational thinking while reading in the social studies field.

(2) To determine in how far growth in power would result from directed teaching of this associational reading.

CHAPTER II

TEST CONSTRUCTION

Introduction

Determining types of associational reading to be studied.-- Research revealed that no investigation had been made to determine the ability of the "average" seventh grader to make voluntary application of his experiential knowledge while reading in the social studies field. Associational thought constitutes a broad field; its far-reaching possibilities are enumerated by Durrell[1] as follows:

(1) Enriching imagery in silent reading.

(2) Reading for similar experiences.

(3) Producing different endings to a story.

(4) Reading to find illustrations of the author's point.

(5) Drawing generalizations from reading.

(6) Reading to find exceptions to the author's point.

(7) Discovering activities which might be carried out.

1/ Donald D. Durrell, "Remedial Reading in the Elementary School", Course in Boston University School of Education, 1938.

CHAPTER II

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Introduction

Determining areas of unsatisfactory reading to be studied.-- Paterson revealed that no investigation had been made to determine the ability of the "average" seventh grader to make voluntary application of his experiential knowledge while reading in the social studies field. Associational thought constitutes a broad field; its far-reaching possibilities are enumerated by Durrell[1] as follows:

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(7) Discovering activities which might be carried out.

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(8) Discovering topics for further study.

(9) Distinguishing sense from nonsense.

(10) Noting similarities between two selections.

(11) Noting differences between two selections.

(12) Detecting differences in points of view through comparison with previous reading.

(13) Noting associations of past and present.

(14) Noting suggestions for improving a selection.

(15) Noticing the bias of the author.

(16) Detecting over-statements and unfounded claims.

From this extensive list it is possible to select any number or combination of specific abilities. Examination of the needs of the seventh grader to perform successfully the reading requirements in the social studies field indicate that (4), (7), and (8), if not the most important, are at least vital to successful interpretation of social studies literature. Also, it was felt that association of expression activity could be made an invaluable stimulus to worthwhile use of leisure time. Therefore, quite arbitrarily this study seeks to investigate these three:

(1) Discovering activities which might be carried out.

(2) Discovering topics for further study.

(3) Applying original illustrations of the author's point.

Appropriateness of utilizing the social studies materials in this study.-- The accepted goals of both the reading and social studies include skill in associational thinking. In both fields attempt is made to: (1) stimulate desire for worthwhile use of leisure time through expression activities; (2) arouse intelligent curiosity; (3) develop the willingness to hold judgment in suspension; and (4) apply established skills and understandings to new situations. Therefore an investigation in associational reading might well utilize social studies materials.

Inadequacy of Available Tests

Criteria for evaluating usability of standardized tests.-- A first requisite was a test to measure associational reading in the social studies field. Tests were found in both social studies and associational reading. These tests were evaluated by the following criteria:

(1) Is the presentation within the comprehension range of the "average" seventh grader?

(2) Are the selections within his experiential knowledge?

(3) In how far does it measure response to opportunities for further research?

(4) In how far does it measure stimulation to creation through expression activity?

(5) In how far does it measure spontaneous use of a specific idea or a generalization in a new situation?

Failure to locate necessary test.-- The first two criteria were satisfied by all tests examined. The remaining criteria were not satisfied, due to the fact that they measured retention of specific data. It must be admitted that several tested ability to apply factual knowledge or memorized judgment in the solution of problems.[1/] Yet diligent search revealed no test which measured free associational thinking as set forth in the purpose of this study. It became necessary to build a test which would meet these criteria.

1/ Wayne Wrightstone, op. cit., p. 192-195.

General Organization

Construction of original test in three series.-- The complete test is included in the Appendix. It will be noted that the test is organized in three series. Series I measures ability to recognize opportunity for expression activity and further inquiry. Series II measures ability to illustrate a specific idea. Series III measures ability to illustrate a generalization.

Organization of each series in three exercises each.-- Each series is comprised of three separate exercises, using respectively geographic, historic and current event data. Each exercise consists of (1) directions specifying the type of associational reading to be measured, (2) a short selection of social studies content, (3) general directions to guide the reader's organization of his responses.

Choice of the Selections

Criteria for choice of reading selections.-- The learner's ability to comprehend the subject matter of the selections was a first requisite. The utmost care

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Choice of the Selections

Criteria for choice of reading selections.-- The learner's ability to comprehend the subject matter of the selections was a first requisite. The chosen data

was taken therefore, to select material within the "average seventh grader's reading comprehension. All selections were evaluated by the following criteria: (1) Are the vocabulary and sentence structure within comprehension range of the "average" seventh grader? (2) Is content interesting to the seventh grader? (3) Is the content closely associated with the seventh grader's experiential knowledge? (4) Does the content stimulate the type of associational thinking being measured? (5) Is the content included in the curriculum of seventh grade geography, history, and current events?

Two original selections.-- Selections that satisfied the above criteria were found for all exercises except two. It was necessary to compose selections for Exercises IV and VII, since no published material which met the criteria could be located.

Introductory Exercises

After the selection of material had been made it was necessary to plan the most effective organization. The statement of directions, progression of items, and general make-up were kept simple. Thus it was assumed that no mechanical detail could hinder the measurement

of the major objectives. An introductory exercise preceded each series. This was developed cooperatively by teacher and pupil, as an illustration of independent test procedure. A response page followed, giving possible answers to clarify for the pupil his approach to the test exercises. In the composition of these illustrative responses sharp differences were emphasized as a stimulation to the pupil to vary his own responses to be made later. Several types of activities were suggested. Questions were formulated using the probable experiential knowledge of the seventh grader. Illustrations were given from a variety of situations, geographic areas, and historical periods. Through this introductory exercises the pupil was made cognizant of the possibilities offered him in the testing which followed.

Organization of Test Exercises

The test exercises themselves consisted of two pages each. On the first was given specific directions to stimulate the type of associational reading to be measured. Then followed the selection to be read.

On the next page the pupil's own responses were to be written. Directions served as a general source of ideas

and as an aid in organizing his responses. In order to measure free association there could be little restriction of response. Therefore in the question-activity and illustration-of-a-generalization series all response guides were alike. In the first exercise of the illustration-of-a-specific-idea series it was assumed that the type of association being measured was less familiar and the concept to be illustrated was more abstract. Therefore, response was directed by specific questions.

Testing the Usability of Material

To appraise the usability of the test which had been built it was given to three seventh grade groups and one ninth. It was found that each test required not more than twenty-five minutes for administration. Therefore, the use of the test would be practical in the junior high school program, and would not be long enough to tire the pupils. It was not intended to set any time restrictions upon the pupils taking the test. That is to say, the prime consideration of the test was to measure quality of pupil response rather than speed. The trial test also indicated the need for

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clarification of directions. In the revision effort was made to phrase each direction so that an inexperienced examiner could administer the test. A copy of the instructions to the examiner follows:

EXAMINER'S DIRECTIONS

1. Test booklets must not be opened. Pencils should be in the ledge.

2. Fill in complete heading on test cover, last name first, age in years only. Then place pencils in the ledge again.

3. Say, "This is a test of your skill in reading. During the test I will not be permitted to answer questions, so listen carefully now. As I read aloud, you read to yourself the directions on the cover of your test booklet."

4. Read orally with the children the directions "To the Pupil" on the cover of the test booklet. (See test.)

5. Now say, "Turn to page 1 (9 or 17). It is a sample. Read it to yourselves as I read it aloud." Read orally the sample directions, sample story, and the exercise completed on page 2 (10 or 18). Then ask, "Are there any questions?"

6. After answering questions, say, "Remember, you may write as you read, you may have as much time as you need, and you must place your pencil in the ledge when you have finished this exercise. Then we shall all turn to the next exercise together. Now take pencils. -ready, -turn."

7. When approximately 90 per cent of the pupils have placed their pencils in the ledge, say, "Stop."

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7. When approximately 90 per cent of the pupils have placed their pencils in the ledge, say, "Stop."

8. At the end of the first and second exercises (Fourth

and fifth, seventh and eighth) say, "Place all pencils in the ledge. There is another exercise on the next page. Do only that exercise, and place your pencil in the ledge when you have finished that one. Take pencils, -ready, -turn."

9. At the end of the third exercise (sixth or ninth) merely say, "Place all pencils in the ledge," and collect the test booklets.

10. On the second and third days directions 2, 3, and 4 are to be omitted.

11. The test should be given on three consecutive days, Exercises I, II, and III the first day, Exercises IV, V, and VI the second, and Exercises VII, VIII, and IX the third.

Summary

The purpose in developing this experiment was to discover in how far reading on the social studies field stimulates free associational thinking by the seventh grader. Associational reading was broken down into three phases, -(1) stimulation to both self-expression through activity and questioning for further research; (2) use of experiential knowledge to illustrate a specific idea; and (3) use of experiential knowledge to illustrate a generalization. No available tests satisfied the criteria set for the experiment. Therefore a test was built which measured all three phases of associational reading. The exercises which were built used geographic, historic, and current event data.

Selections were evaluated by the following criteria:

(1) Is the presentation within the comprehension range of the "average" seventh grader?

(2) Are the selections within his experiential knowledge?

(3) In how far does it measure response to opportunities for further research?

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(5) In how far does it measure spontaneous use of a specific idea or a generalization in a new situation?

The test booklet was organized to include:

(1) Pupil data sheet

(2) Introductory exercise to Series I

(a) Directions and presentation of selection.
(b) List of suggestive responses.

(3) Series I, association of expression activities and questions.

(a) Exercise I, historic content.
(b) Exercise II, geographic content.
(c) Exercise III, current event content.

(4) Introductory exercise to Series II.

(a) Directions and presentation of selection.

(b) List of suggestive responses.

(5) Series II, Association of illustrations of a specific idea

(a) Exercise IV, historic content.
(b) Exercise V, geographic content.
(c) Exercise VI, current event content.

(6) Introductory exercise to Series III.

(a) Directions and presentation of selection.
(b) List of suggestive responses.

(7) Series III, association of illustrations of a generalization.

(a) Exercise VII, historic content.
(b) Exercise VIII, geographic content.
(c) Exercise IX, current event content.

(b) List of suggestive responses.

(5) Series II, Association of illustrations of a specific idea

(a) Exercise IV, historic content.
(b) Exercise V, geographic content.
(c) Exercise VI, current event content.

(6) Introductory exercise to Series III.

(a) Directions and presentation of selection.
(b) List of suggestive responses.

(7) Series III, association of illustrations of a generalization.

(a) Exercise VII, historic content.
(b) Exercise VIII, geographic content.
(c) Exercise IX, current event content.

Exercise III

DISCOVERING ACTIVITIES AND TOPICS FOR FUTURE STUDY

Current Events

Here is a third story. As you read it, think of new topics to read about, questions to answer, and activities to do related to our passenger airlines to Europe. Then write on the next page.

YANKEE CLIPPER OFF ON FIRST PAY HOP

PORT WASHINGTON? N.Y., July 8 (AP)--Nineteen persons, first to make a commercial transatlantic flight over the so-called "Northern Route", left here today aboard Pan America Airways' giant flying boat Yankee Clipper.

Eleven of the passengers were newspaper, magazine, radio or news service executives.

The huge plane left the waters of Long Island Sound at 8:25 A.M. and headed for Southampton, England.

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1. This story must have made you think of many related topics you want to look up. List here the questions and topics you thought of as you read.

2. Name the many activities suggested to you by the story. See how many different kinds you can name, but be sure they are associated with the story.

WAIT until your teacher tells you to go on to the next page.

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Exercise V

FINDING ILLUSTRATIONS

Geography

Here is another chance to test yourself in giving illustrations. This story illustrates some causes of forest fires. As you read the story try to think of illustrations of ways to prevent fires in the forest or in other places. Follow the directions on the next page.

Causes of Forest Fires

The industries that have ravaged our forest added to the fire menace in our forests. The dead branches left by lumber-men lay on the floors of the forests like so much kindling, waiting for a spark to set them off. When the spark was supplied by some careless hand, by lightning, or by a passing locomotive, the forest became a huge bonfire. In many cases of serious forest fire the evil started long before the spark was supplied. It started with the people who failed to clear the forest floors of dangerous tinder. Forest fires have been one of the chief means of wasting our forests.

Destructive fires still continue to ravage our remaining forest areas. One of every hundred forest fires today ninety are caused by carelessness. About fifty thousand fires occur yearly in our country.

-"Social Studies", Book Three
Bruner, Smith
Page 345

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-"Social Studies", Book Three
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1. Great care is taken to prevent destruction of forests by fire. In this space tell some ways not mentioned in the story that <u>forests</u> can be protected.

2. Illustrate some ways to prevent fires in <u>other places</u>.

<u>WAIT</u> until your teacher tells you to go on to the next page.

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2. Illustrate some ways to prevent fires in other places.

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Exercise VII

APPLYING GENERALIZATIONS

History

Here is a generalization: Defeat can be made a step toward success. As you read the story, think of illustrations of this statement. List them on the next page.

Earning Success

We never can tell which is ahead of us, success or defeat. We do know that we all must meet defeat sometimes. We know also that much serious effort can lead from defeat to victory. We do know, however, that few people meet success unless they work hard.

You may remember in the Trojan War the Greeks struggled for nine years. Finally one clever Greek thought of making the great wooden horse. The strange animal was accepted inside the city walls as an offering. Then the Greek soldiers hidden within climbed out. Troy was captured; Greece had won the war through her persistent effort.

In their turn the Americans in the Revolutionary War met one defeat after another. Constantly George Washington and his army had to retreat so that they would not be forced to surrender. They were ragged and ill-fed. Finally a surprise attack on Trenton and Princeton gave them two victories. How quickly they forgot discouragement and thrilled to the cause of liberty!

Lincoln faced many a defeat. His family had no money. This was defeat at the very beginning, but Lincoln refused to give up his ambitions. He studied under great hardship; he worked hard and long for little money. Many times he lost his business, became penniless, and had to start all over again. When he had been a lawyer for some time, he debated with Stephen Douglas. Each man wanted to represent the state in Congress. Lincoln lost, but the debate made him famous. Two years later he became one of our most noted, one of our most revered presidents. He made his defeats serve as stepping-stones to success.

This is the generalization: Defeat can be made a step toward success.

In the space below illustrate this generalization with as many examples as you can. Try to make your illustrations very different from each other.

WAIT until your teacher tells you to go on to the next page.

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CHAPTER III

DESCRIPTION OF ASSOCIATIONAL LEARNING EXPERIMENT

Planning the Administration of the Test

Selection of pupils to be used in the investigation.-- After the test had been constructed and trial usage had indicated the necessary revisions, the next logical step was to plan for its administration. In the choice of pupils to be tested the following factors were considered: (1) Need for a sufficient sampling for significant results; (2) pupils of comparable socio-economic and national heritage; and (3) pupils learning through comparable teaching practices and facilities. The superintendents of two school systems were approached and gracious cooperation granted.

The group tested numbered 243, 106 from one city and 137 from the other. This was a sufficient sampling to prevent the element of chance from distorting the results.

Restricting the variables.-- To reduce the variables in the testing situation the following factors were made similar: (1) Supervising agents administered the tests in both systems; (2) the testing period was planned

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Restricting the variables.--To reduce the variables in the testing situation the following factors were made similar: (1) Supervising agents administered the tests in both systems; (2) the testing period was planned

to cover the same calendar week; (3) the number of periods for testing were identical; (4) the order for testing followed the progression set up in the test booklet; (5) the same direction sheets were followed by all examiners; (6) all pupils taking the test were in the first half of their seventh grade year, and all pupils present those days on which tests were administered took the tests.

Cursory Examination of Test Results

A cursory examination of test results showed a slight degree of mastery in this reading skill; whether this was due to the inadequacy of the test or the inability of the pupils was problematic. Out of this situation came the desire to test whether exercises could be devised for developing pupil power in associational reading. For the purpose of this experiment three factors must be present: (1) an experimental group of "average" seventh graders; (2) a teacher willing and able to conduct the experiment; and (3) a plan by which the experiment might be tried.

Planning the Experimental Teaching

Selection of the experimental group.-- One of the grade groups examined in the initial testing was selected to serve as the experimental group. These pupils met the requirements for all who took the test (p. 35). These additional factors influenced the choice of this group for the experimental teaching: (1) It appeared to be a satisfactory sampling from the 243 cases used in the original test, (2) It was a heterogeneous class, (3) It was of normal size, 35 in number. In addition, (these conditions would indicate the group selected to be a "normal sampling.") the teacher evidenced ability and willingness to help. Both teacher and class were easily accessible to the investigator.

Selection of the experimental teacher.-- To keep the situation as objective as possible it was planned for the homeroom teacher of the experimental group to do the experimental teaching. Recommended by her superiors as an able teacher, she had had such professional training and advanced study as to insure active interest in experimentation. In recent years she has introduced adolescent boys and girls to the social studies

curriculum of the junior high school. Altogether she seemed to possess the necessary qualifications for the experimental teacher.

Purpose of the Teaching - Learning Cycle

The purpose of the testing program described in Chapter II was to measure the extent to which the seventh grader practices spontaneous association while reading in the social studies field. This chapter continues the report of the experiment by describing the program devised by the writer to test the effect of directed teaching upon free associational reading. It was hoped that data from the experiment might help to determine in how far such ability could be strengthened through the social studies curriculum planned for the seventh grade.

Initial Steps in Planning the Procedure

The source of the writer's desire to make this study.-- The writer's interest in associational reading evolved from experience with reading clinic problems and social studies teaching in the junior high school. To her the term "associational reading" is extensive in scope; and its influence upon the adolescent learner's power for future study life seemed without measure. Through incidental teaching a variety of materials and techniques were tested. Out of all this

came a belief that the "average" seventh grader could advantageously use training in associational reading.

To test this conviction and to make of it more than mere theory became the problem. So this study was entered upon to determine whether associational thinking could be trained, and in how far the results of such training could be measured.

Defining the limits of the problem.-- So extensive was the problem that it became necessary to define the limits for this particular study and to ascertain the best approach. This delimitation was achieved by trial teaching with the writer's own pupils before the thesis study was begun. The first step in this trial teaching was to build a series of exercises using sections from a civics textbook.[1/] The exercises were to be used as the weekly study skill lesson provided for in the program of Grade 7A. This work was oriented by a discussion of the term "associational thinking". Illustrating the process of mental association in conversation the pupils defined three types of associative thinking,- Sequential, Central, and Complex.

Sequential Association.-- Sequential Association to them meant that each idea in a chain is suggested by the one directly preceding it. One illustration

1/ H.C. Hill, The Life and Work of the Citizen, Ginn and Co., Boston, 1935.

built by the class is given in Figure 1.

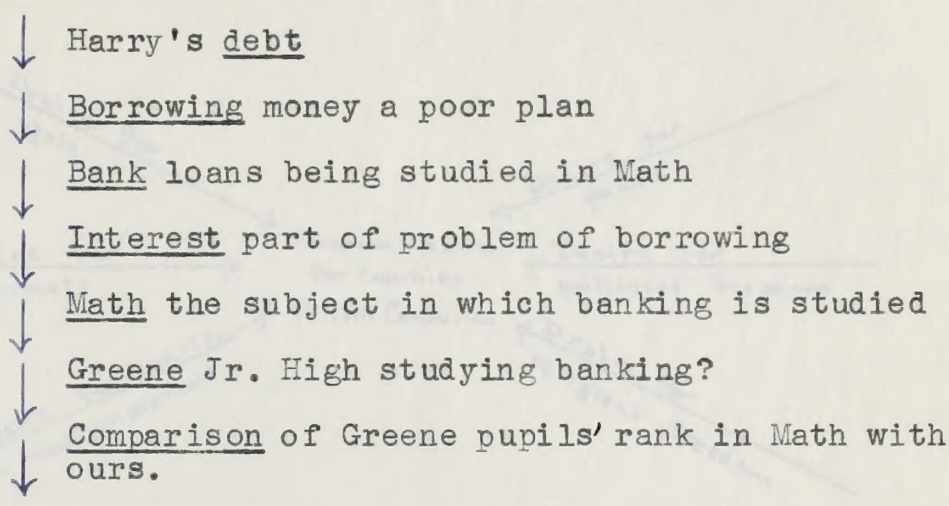


Figure 1. Sequential Associational Thought Pattern, in which one idea in each topic in linked to one idea in the previous topic.

This type of association was recognized as the simplest, least complete, most loosely organized, requiring the least effort in linking ideas.

Central Association.-- Class discussion defined the second type as Central Association. It was suggested that a central idea serve as the magnet toward which are attracted many closely associated ideas. These are held in place to form a unified whole. An illustration of this attraction is the contributions of several people in an animated conversation. Another illustration is the

presentation of a well-developed social studies topic by a speaker. The diagram in Figure 2 analyzes this type.

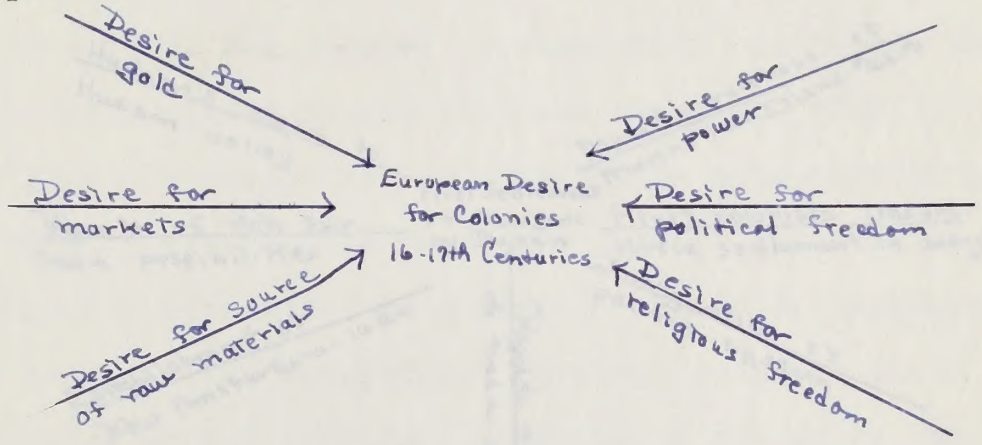
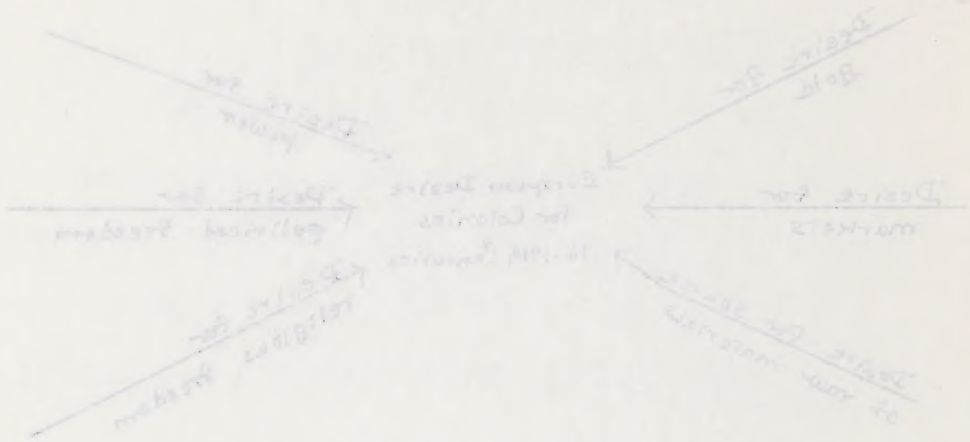


Figure 2. Central Associational Thought Pattern, in which all ideas contribute to the development of a unified whole.

Complex Association.-- Further development of the discussion defined the third type as Complex Association. To the pupils this meant a combination of Sequential and Central Association. That is to say, after many ideas have contributed to the unification of a central theme, one of the contributing ideas serves as a magnet for the development of a new unit of thought. It was readily seen that Complex Association is the highest type of



associational thinking. The diagram in Figure 3 illustrates this process.

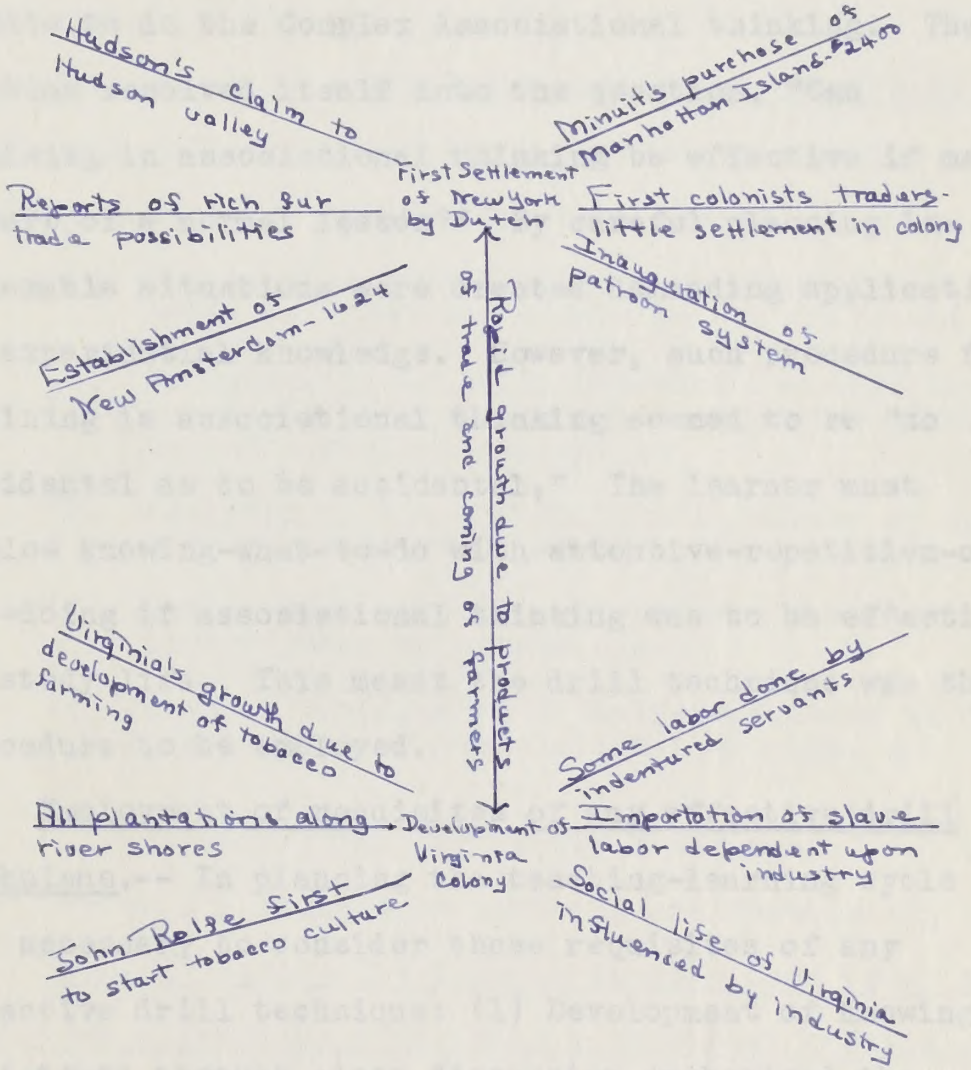
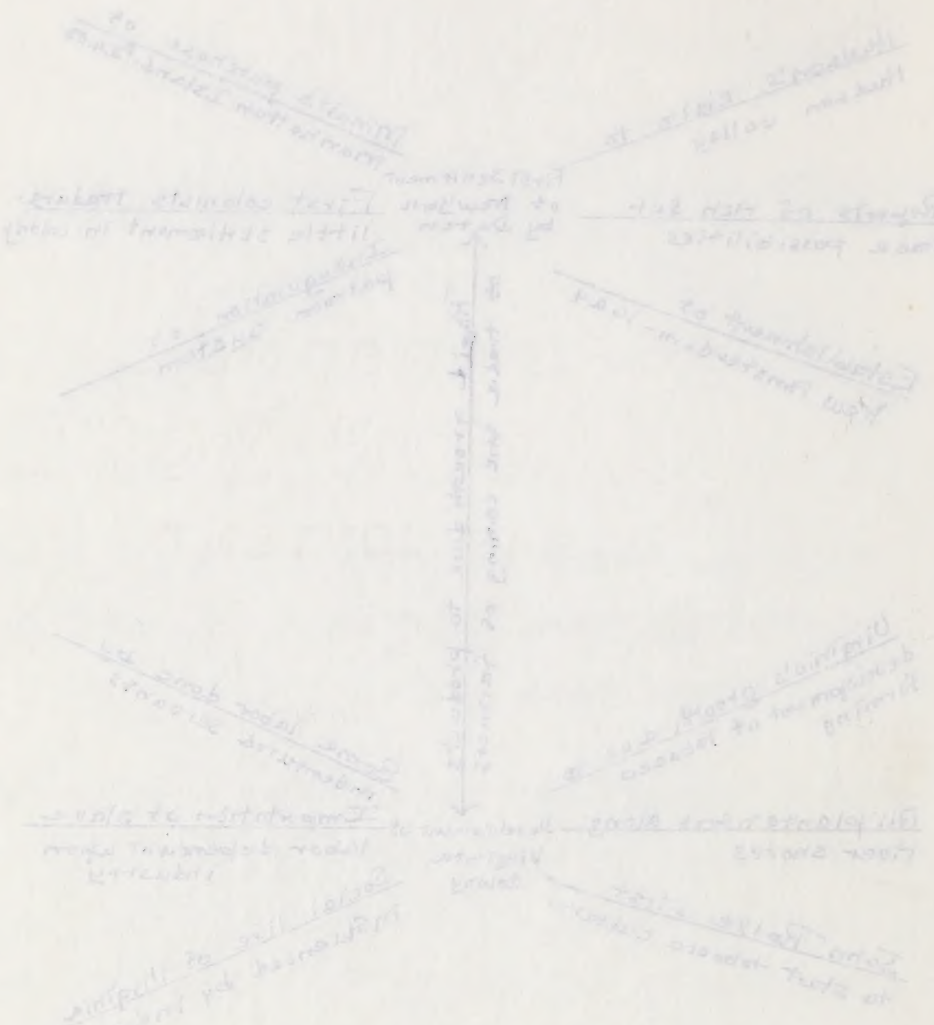


Figure 3. Complex Associational Thought Pattern in which the Central and Sequential Types are combined. One idea contributed to the first centralized unit also leads into a new line of thought. This becomes a centralized unit when associated ideas are drawn into the group.



Determining of drill procedure as the most effective technique for the experimental teaching.-- The next step was to find the most effective way to teach pupils to do the Complex Associational thinking. The problem resolved itself into the question, "Can training in associational thinking be effective if made a part of a normal lesson?" By careful planning innumerable situations were created demanding application of experiential knowledge. However, such procedure for training is associational thinking seemed to be "so incidental as to be accidental," The learner must follow knowing-what-to-do with attentive-repetition-of-the-doing if associational thinking was to be effective in study life. This meant the drill technique was the procedure to be employed.

Employment of requisites of any effective drill technique.-- In planning the teaching-learning cycle it was necessary to consider these requisites of any effective drill technique: (1) Development of knowing-what-to-do through class discussion emphasized the presentation of new concepts, clarification of misconceptions, and improving ability in self-expression. (2) Strengthening of the new learning through attentive

repetition was made possible in the daily exercises.

(3) Application of the new learning in many knowledge areas was made possible by creating a variety of situations for its use.

Employment of appropriate principles of effective teaching.-- It was also deemed necessary to employ these several principles of any effective teaching:

(1) Progression from the known to the related unknown and from the simple to the difficult.

(2) Routinizing the daily procedure so that the learner's attention might be entirely given to the associational skill.

(3) Analysis of the associational process so that understanding might always precede use.

(4) Development of a thought-pattern for those who lacked power to create one.

(5) Gradual development of self-dependence in the application of associational thought.

Planning the Day-by-Day Exercises

Series I - Expression Activity and Questioning

Five-day cycle of drills to develop some power to associate expression activities with social studies reading.-- Lesson I through class discussion established the concept of relating expression activities with reading. In the pretest pupils had been asked to suggest activities related to the selection. Their reactions in satisfying

this requirement served as a basis for initiating the lesson. Consideration of the world's need for mentally active people followed. Cooperatively teacher and pupils discussed characters who through a variety of channels have brought to themselves recognition. Instances of their contributions made while young were also cited. Thus was developed the concept that mental activity in childhood can become an established habit and that reading is a source from which may come expression activity. In this way the pupils were directed toward the desire to use associational thinking as they read the drill exercise. Four similar lessons completed the five-day cycle. (See Appendix, pp. 304-308)

Interjection of teaching lesson to clarify expression activity concept.-- Lesson VI was planned to meet an unexpected deficiency. A majority of the pupils through the previous lessons revealed their limited experience with expression activity. Therefore this additional lesson was inserted to develop further the concept, expression activity, and to suggest its function in associational thinking. A list of possible activities was built and a thought pattern to be used by the pupils in recognizing opportunity for similar activities was

designed. (Appendix, p. 39a)

Lesson VII placed its emphasis upon the stimulation of questions and their form of expression. So able were the children in raising questions that no thought pattern was necessary.

Gradual development of independent power through entire cycle of eighteen drill exercises.-- Lessons VIII through XIV made use of both types of associational thinking,- expression activities and questioning. Self-dependence was achieved by gradual elimination of the use of suggestive responses. That is to say, in the first lessons much assistance was offered through a list of possible responses. The pupils evaluated these to determine the ones which were closely associated with the selection. In Lesson VI a list of activity suggestions was formulated cooperatively to serve as a source for increasing the number and variety of responses. Repeated use strengthened spontaneous response so that by lesson XII reference to the list was greatly diminished. Now phrases from the selection were listed to take the place of the multiple responses offered earlier. After Lesson XII directed teaching of this first type of associational reading became intermittent, thus applying effective

designed. (Appendix, p.)

Lesson VII placed the emphasis upon the stimulation of questions and their form of expression. So able were the children in raising questions that no thought pattern was necessary.

Gradual development of independent power through entire cycle of eighteen drill exercises.-- Lessons VIII through XIV made use of both types of associational thinking.- expression activities and questioning. Self-dependence was fostered by gradual elimination of the use of suggestive responses. That is to say, in the first lessons much assistance was offered through a list of possible responses. The pupils evaluated these to determine the ones which were closely associated with the selection. In Lesson VI a list of activity suggestions was formulated cooperatively to serve as a source for increasing the number and variety of responses. Repeated use strengthened spontaneous response so that by lesson XII reference to the list was greatly diminished. New phrases from the selection were liked to take the place of the multiple responses offered earlier. After lesson XII directed teaching of this first type of associational reading became intermittent, thus applying effective

drill technique. By Lesson XXVII no suggestive helps of any kind were permitted. To allow for individual differences in this matter of self-dependence, those pupils who were able to make original associations could do so in every lesson. In the last two lessons of this type all pupils were required to make such original associations as they were capable of doing.

Series II - Illustrating a Specific Idea

Establishment of habitual use of thought pattern for illustrating a specific idea from experiential knowledge.-- Lesson XV introduced recognition of opportunity for original illustration of a specific idea through application of experiential knowledge. In its initiation the lesson defined this type of associational thinking. As the lesson developed a definite thought pattern was set up, the use of which would strengthen power to use experiential knowledge to illustrate in this manner. The pattern followed this design: (1) Rereading to discover the key idea; (2) Analyzing to find the author's illustrations of the key idea; (3) Matching a given list of key ideas with illustrations. In the two lessons following opportunity was given to apply this thought pattern.

Gradual development of independent power through cycle of fifteen drill exercises.-- Lesson XIX extended the thought pattern to include: (1) Finding words in the selection that suggested illustrations; (2) illustrating from past, present, and future; (3) applying the key ideas to various geographic areas. Here, as in the first series, self-dependence was encouraged by the gradual withdrawal of suggestive helps, until in Lesson XXVI the thought pattern itself was the only guidance. In the last four drills it was expected that the pupil could do this type of associational thinking with no help whatever.

Series III - Illustration of Generalizations

Presentation of series for illustrating a generalization from experiential knowledge.-- Lesson XXIX defined the term "generalization" and gave a sample, "Crops need moisture"; Illustrating this generalization through class discussion developed its significance and clarified the geographic principles involved. Thus were the pupils introduced to the third type of associational thinking being promoted by this study.

A statement of the generalization to be illustrated

was given at the beginning of each lesson. In the first exercises the pupils analyzed the selection and, finding the author's interpretations of the generalization, applied them to the statement of the generalization, repeated on the response page. Another approach to this associational thinking was treated by the evaluation of several illustrations already listed on the response page.

Gradual development of independent power through cycle of twelve drill exercises.-- Lesson XXXIV introduced the thought pattern for this series. Varying somewhat from the one described in Series II, the design followed these steps: (1) Using experiential knowledge of the past, present, and future; (2) Using experiential knowledge of different geographical areas; and (3) Using first-hand experience. As in the two previous series self-dependence was encouraged by the gradual withdrawal of suggestive helps until in Lesson XL, the pupil was expected to respond independently.

Summary chart of distribution of lesson types and content.-- A summary of the foregoing is given in Figure 4. The day-by-day lessons are listed, showing the sequence in lesson type and the related subject matter

employed. It may be seen that there is an almost equable distribution of lessons in the three knowledge areas used in this study. It may also be noted that the lessons follow the recognized pattern for learning through drill,- namely, (1) several concentrated lessons immediately following the presentation of the principle, and (2) intermittent opportunity for use,- the lapse of time increasing and the helps offered decreasing throughout the series.

Lesson		Type of Associational Reading	Subject Matter Content
First Week	I	Activities	Geography
	II	Activities	Geography
	III	Activities	History
	IV	Activities	History
	V	Activities	Current Events
Second Week	VI	Activities	General discussion
	VII	Questions	Geography
	VIII	Activities-Questions	Geography
	IX	"	History
	X	"	History
Third Week	XI	"	Geography
	XII	"	History
	XIII	"	Current Events
	XIV	"	Current Events
Fourth Week	XV	Illustration of a Specific Idea	General
	XIV	"	Geography
	XVII	"	History
	XVIII	"	Current Events
Fifth Week	XIX	"	Geography
	XX	"	Geography
	XXI	"	History
	XXII	Activities-Questions	History
	XXIII	Illustration-of-a-Specific Idea	Current Events
Sixth Week	XXIV	"	History
	XXV	"	Geography
	XXVI	"	Geography
	XXVII	Activities-Questions	History
	XXVIII	Illustration of a Specific Idea	Current Events
Seventh Week	XXXIX	Illustration of a Generalization	History
	XXX	"	Geography
	XXXI	"	History
	XXXII	"	History
	XXXIII	"	Current Events

Lesson		Type of Association Reading	Subject Matter Content
First	I	Activities	Geography
Week	II	Activities	Geography
	III	Activities	History
	IV	Activities	History
	V	Activities	Current Events
Second	VI	Activities	General discussion
Week	VII	Questions	Geography
	VIII	Activities-Questions	Geography
	IX	"	History
	X	"	History
Third	XI	"	Geography
Week	XII	"	History
	XIII	"	Current Events
	XIV	"	Current Events
Fourth	XV	Illustration of a	
Week		Specific Idea	General
	XVI	"	Geography
	XVII	"	History
	XVIII	"	Current Events
Fifth	XIX	"	Geography
Week	XX	"	Geography
	XXI	"	History
	XXII	Activities-Questions	History
	XXIII	Illustration-of-a- Specific Idea	Current Events
Sixth	XXIV	"	History
Week	XXV	"	Geography
	XXVI	"	Geography
	XXVII	Activities-Questions	History
	XXVIII	Illustration of a Specific Idea	Current Events
Seventh	XXIX	Illustration of a	
Week		Generalization	History
	XXX	"	Geography
	XXXI	"	History
	XXXII	"	History
	XXXIII	"	Current Events

Lesson		Type of Associational Reading	Subject Matter Content
Eighth Week	XXXIV	Illustration of a Generalization	Geography
	XXXV	"	History
	XXXVI	"	Current Events
	XXXVII	Activities-Questions	Geography
	XXXVIII	Illustration of a Specific Idea	History
Ninth Week	XXXIX	"	History
	XL	Illustration of a Generalization	Geography
	XLI	"	History
	XLII	"	Current Events
	XLIII	Activities-Questions	Current Events
Tenth Week	XLIV	Illustration of a Specific Idea	Current Events
	XLV	Illustration of a Generalization	Current Events
Totals	45	Series I-18	History 16
		Series II-15	Geography 14
		Series III-12	Current Events 13
			General 2

Figure 4. Day-by-day Distribution of Subject Matter and Associational-Reading Types throughout the Ten-week Teaching-Learning Cycle.

Boston University
School of Education
Library

Sample lessons of each series.-- Three sample lessons of each type of association follow. Lessons III, XIII, and XLIII concern association of expression activities and questions. These drills illustrate progressive stages in the teaching-learning cycle. Lessons XVIII, XXVI, and XXLIV illustrate progressive stages in developing power to illustrate a specific idea. Lessons XXXIII, XLI, and XLV illustrate progressive stages in developing power to illustrate a generalization.

Sample lessons of each series.-- Three sample lessons of each type of association follow. Lessons III, XIII, and XLIII concern association of expression activities and questions. These drills illustrate progressive stages in the teaching-learning cycle. Lessons XVIII, XXVI, and XXXIV illustrate progressive stages in developing power to illustrate a specific idea. Lessons XXXIII, XII, and XIV illustrate progressive stages in developing power to illustrate a generalization.

Lesson III

Discovering Activities and Topics

Today's story is about the trade routes used by Europeans in trading with the East. As you read think of activities that would be fun to do, topics which you would like to study, and questions raised in your mind while reading.

You may write them on the next page as you read or afterwards.

Trade Routes to Indies Long and Dangerous

The way of the eastern trade was long and difficult. Some wares come from the Indies even the mountains and deserts of Asia, across the Black and Caspian seas to Constantinople, the chief European gate-way to the East. Some eastern goods came by way of the Indian Ocean and the Red Sea to Egypt, across Egypt and down the Nile to the port of Alexandria. A third route led partly across the Indian Ocean and the Persian Gulf, then overland to Antioch on the coast of Asia Miner. From Antioch, Alexandria, and Constantinople, Mediterranean ships carried the goods westward.

The eastern trade was filled with dangers. Many a caravan bearing wares across the desert was attacked by

robbers. In the mountain passes of the East, plunderers often waylaid trains of pack animals. On the eastern seas and on the Mediterranean many a ship was captured by pirates.

But difficult and dangerous as all these routes were, the trade with the East was profitable and the Mediterranean was lively with the sails of many trading ships.

America In the Making
Chadsey, Weinberg, Miller
Pages 15 - 16

Lesson III (continued)

1. From the list below select the activities most closely associated with the story. Write their letters on your paper.

a. Construct a medieval trading ship.
b. Write an autobiography imagining yourself to be in a caravan attacked by robbers.
c. Show on a map the three chief routes of medieval trade between Europe and the East.
d. Draw an illustration of a modern ship of commerce.
e. Find some pictures to show modes of transporting goods in those days.
f. Write a description of the harbor of Venice.
g. Make a political map of medieval Europe.
h. Find out what experience the United States has had with pirates.
i. Arrange a display showing the wares carried to Venice and Genoa from the East.
j. Make a cartoon illustrating the following statement: Constantinople is the gateway to the treasure house of Asia.
k. Show on a map the modern trade routes between western Europe and the Far East.
l. Sketch a battle between a trading ship and a pirate ship.
m. Compare the size of the merchant marines of five modern world powers.
n. Read a story about pirates in the Mediterranean.
o. Tell the story of Prince Henry of Portugal.
p. Find out how the pirates were driven out of the Mediterranean.
q. Report to the class on Columbus' discovery of America.
r. With others dramatize a Turkish robber band's attack on a caravan.

2. What questions did you think of?

Lesson XIII

Here is a story about a new tin mine that is being opened in Bolivia. As you read it think of questions, topics, and activities associated with the story.

Tin

President Busch of Bolivia is beginning to export tin from his country. He and his nation are expected to get rich quickly. The deposits of tin have been only partly used, and tin is a principal export of Bolivia. It is a very necessary metal to all nations, and the world has relatively few mines of commercial importance. Some deposits, which have been worked since the first trading between Britain and Phoenicia, are located in Cornwall, England; some are in the Dutch East Indies. In southeastern China, near British India, are mines not yet greatly used. Most important are the several deposits in Bolivia.

The United States is a great importer of tin. Therefore we shall probably have to pay high prices for whatever ingots of this metal we purchase from Bolivia. The entire world is searching for tin at the present time. Some New England people will wonder why tin is not extracted from the historic mine at Jackson, New Hampshire, by modern methods.

- Adapted from an editorial in the Providence Evening Bulletin selected from the Lowell Courier- Citizen

Lesson XIII (continued)

1. List, in the spaces provided below, the questions or topics suggested to you by the following phrases from the story:

 a. Beginning to export tin

 b. Get rich quickly

 c. Mines of commercial importance

 d. First trading between Bolivia and Phoenicia

 e. United States is a great importer of tin

 f. Have to pay high prices

2. Add here any other questions and topics suggested to you.

3. Write, in the spaces provided below, the activities suggested to you by the following phrases from the story:

 a. Principal export of Bolivia

 b. Very necessary metal

 c. Cornwall, Dutch East Indies, southern China, and Bolivia

 d. United States is a great importer of tin

 e. Historic tin mine at Jackson, New Hampshire

4. Add here any other activities you thought of.

Lesson XLIII

This story tells about a government test to find use for some of our surplus cotton supply. As you read, think of questions, topics, and activities associated with this story.

FSA Tests House Built of Cotton

Washington, Oct. 7 (AP)- Men who have built steel houses, mud houses, adobe houses and assembly-line frame houses are watching now the weather's wear on their first cotton house.

If a duck-covered dwelling in Coffee County, Alabama, stands the test, the South may find a new outlet for its cotton surplus.

The cotton house is the latest experiment in the Farm Security Administration's search for ways to house poor families comfortably within their incomes.

Housing families with the building materials close at hand is an FSA principle which has led its engineers to experiment with pine in the Southeast; cedar in the Northwest; steel in Tennessee and desert dirt in New Mexico. And now they are eyeing the house that is covered with cotton duck- the same duck long used by the United States Navy as water proof, sun proof, spot proof decking for ships.

- New York Times
October 7, 1939

1. Write on your paper the questions and topics suggested to you by the story.

2. Write the activities suggested to you by the story.

Lesson XVIII

Today's story is about a Christmas party given by a Congressman to under-privileged children. As you read, think of illustrations to show how the less fortunate are given happiness by interested people.

Gerry To Fete 1500 Children

Fifteen hundred youngsters will have a lively Christmas when U. S. Senator Peter G. Gerry holds his 27th annual party Monday at 11 a.m. in Infantry Hall on South Main Street.

There will be a turkey dinner followed with ice cream and popcorn. Santa Claus will distribute mittens, games, and dolls. Tickets for the affair are being distributed by R. I. Society for the Prevention of Cruelty to Children, the police department, and St. Vincent de Paul Society. Music will be furnished by Fay's orchestra.

- Providence Evening Bulletin
December 20, 1939

Governor Vanderbilt's egg hunt for children at Easter, and Mr. Jesse Metcalf's sponsoring of the Providence Festival Chorus are two other illustrations of sharing pleasure. Most people enjoy giving happiness to those less fortunate than they. These philanthropic men use a means quite often employed by people in public service, or by those who are financially able. This is their way of spreading sunshine, and countless other ways are used by other people.

Lesson XVIII

Today's story is about a Christmas party given by a Congressman to under-privileged children. As you read, think of illustrations to show how the less fortunate are given happiness by interested people.

Merry To Pete 1500 Children

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Governor Vanderbilt's egg hunt for children at Easter, and Mr. Jesse Metcalf's sponsoring of the Providence Festival Chorus are two other illustrations of sharing pleasure. Most people enjoy giving happiness to those less fortunate than they. These philanthropic men use a means quite often employed by people in public service, or by those who are financially able. This is their way of spreading sunshine, and countless other ways are used by other people.

Lesson XVIII (continued)

1. Reread the story, looking for the key idea. Write it in this space.

2. In the story find three illustrations of this key idea. Write them in this space.

3. The key idea is: People enjoy giving happiness to those less fortunate than they.

 In the left-hand column are topics. See how many of them you can illustrate independently. Write each illustration in the space below its topic.

 Now match the illustrations in the right-hand column with the proper topic by putting the correct letter to the left of the illustration, just as you have been doing.

(a) President Roosevelt	Singing Christmas carols in hospitals
(b) Boy Scouts in Providence	Taking gifts to hospitals
(c) American Legion	Repairing toys for Christmas gifts
(d) Firemen in Providence	Egg-rolling contest for children
(e) Providence Festival Chorus	Delivering toys for the Providence Journal Santa Claus

4. In this space write two original illustrations of this key idea.

Lesson XVIII (continued)

1. Reread the story. Looking for the key idea. Write it in this space.

2. In the story find three illustrations of this key idea. Write them in this space.

3. The key idea is: People enjoy living happiness to those less fortunate than they.

In the left-hand column are topics. See how many of them you can illustrate independently. Write each illustration in the space below its topic.

Now match the illustrations in the right-hand column with the proper topic by putting the correct letter to the left of the illustration, just as you have been doing.

(a) President Roosevelt — Singing Christmas carols in hospitals

(b) Boy Scouts in Providence — Taking gifts to hospitals

(c) American Legion — Repairing toys for Christmas gifts

(d) Firemen in Providence — Egg-rolling contest for children

(e) Providence Festival Chorus — Delivering toys for the Providence Journal Santa Claus

4. In this space write two original illustrations of this key idea.

Lesson XXVI

As you read this story about changes in the fishing industry, think of illustrations to show how other industries have changed. Perhaps you can even add other ways in which this industry has changed.

Fishing Has Been Revolutionized

Fishing is still carried on with hook and line, as it has been for centuries upon centuries, but this is largely for sport. All but a small fraction of the fish that are sold in quantities are caught in nets.----

The marketing methods of the fishing industry have also been modernized. For centuries there was practically no change in the methods of marketing fish. Fish were always dried and salted if they were to be shipped any great distance. Modern scientists have developed a process of quick freezing which does not damage the fish and makes it possible to keep this product for "out of season" use. Great quantities of mackerel are frozen, and in the winter when the mackerel have disappeared the fish are removed from the large freezer and marketed.----

These changes have caused a rapid growth in the fishing industry. At the Boston Fish Pier, the largest in the world devoted exclusively to the handling of fish, as much as 375,000,000 pounds of fish have been cared for in a single year. Today improved transportation and refrigeration facilities make it possible for fish to be shipped hundreds of miles into regions far from the sea, and yet be kept fresh. There is practically no limit to the area over which fish and seafood can be satisfactorily distributed.----

Although not much change has been made in the fishes, modern man engages in fish culture to bring about an increase in the amount of available fish. In the latter part of the nineteenth century, investigation in the United States showed that certain fishes has decreased, and activities to bring about an increase were taken.

- Exploring Georgraphy
Casner, Gabriel
Pages 85-86

1. Write on your paper the key idea.

2. Write illustrations given in the story.

3. In finding your own illustrations today your chief helping step will be to find key words. Use the other steps where you can. There are no suggestions given, so see what you can do independently.
 a. Illustrate other ways in which the fishing industry has changed.
 b. Illustrate how other industries have changed.

Lesson XLIV

This news clipping illustrates ways in which the government cares for the safety of its people. As you read, think of other ways in which the government does this.

Snow Covers Ice Spots Increasing Traffic Hazards

A steady fall of sticky snow was covering Rhode Island today, hiding icy spots on the hills and highways to increase travel hazards. The cold wave continued without letup.

Small craft were warned at 10:45 a.m. to watch for a disturbance moving up from the Virginia Capes accompanied by strong northeast winds. The warnings were posted from Block Island to Provincetown.

State, Providence, and U.E.R. officials reported that sanding and salting crews were out early in the morning to reduce ice hazards. When the fall reaches two inches in Providence, according to city yard officials, snow plow crews would be sent to clear the streets.

- Providence Evening Bulletin
January 8, 1940

On your paper list your illustrations to show how the government cares for the safety of its people.

Lesson XXXIII

Here is today's generalization: Conservation is being used to maintain the reserve supply of many of our natural resources.

Conservation Aids

Denver, Jan. 8. (INS)- Soil conservation that has helped farmers especially in the so-called Dust Bowl areas, has resulted in better land use and erosion control on 105,000,000 acres in 23 states, according to H. H. Finnell, director of Soil Conservation Service in this region.

-Providence Evening Bulletin
January 8, 1940

Water Power and Conservation

The important thing to remember in connection with the use of falling water for power is that in such use the water is not destroyed. Coal and petroleum, our two other chief sources of power, once used are gone forever. Therefore, wherever hydroelectric power is being used in place of steam-electric power made by burning coal or oil, an inexhaustible resource is being used in place of an exhaustible one. This is the best kind of conservation.

But when the development of water power means the destruction of beautiful waterfalls, there is good reason to think before acting.---Since there are many places in the world where hydroelectric power can be developed without spoiling the beauty of the scenery, we hope that it may never be necessary to sacrifice natural beauty to power development.

Fish Conservation

---It is also necessary to see that life in the sea and rivers is protected. There are strict laws against catching all the salmon that swim up any stream to lay their eggs. Unless these laws are obeyed, the world will soon be without any salmon, which is one of the best food fishes. In Nova Scotia there is a limit to the period during which lobsters can be caught. In this way the people of Canada are preserving indefinitely their supply of lobsters. Just as in the case of the fur seal, it will be necessary to have international agreements to prevent the killing off of important types of food-producing fishes and the larger animals of the sea.

-The World at Work--Atwood
Pages 254 and 203
Published in 1931

This is the generalization: Conservation is being used to maintain the reserve supply of many of our natural resources.

1. Re-read the story to find three illustrations of this generalization. Write them in this space.

2. Here is a group of illustrations. Some are examples of this generalization; some are not. Place a check to the left of the acceptable ones.

 a. Invention of rayon
 b. Raising of fur-bearing animals
 c. Production of vegetable oils
 d. Utilization of sawdust
 e. Use of fertilizer
 f. Rotation of crops

3. Now write some original illustrations in this space.

Lesson XLI

Today's generalization is this: The Machine Age has made life happier, but it also has brought many difficulties and problems.

As you read, think of original illustrations to show how machinery has brought happiness, but has also created problems.

It is often said that, with all the advantages which we have, people who live today are not any happier that those who lived five hundred years ago. How can this be with all the inventions that have been made available to improve life and living? The man of the world today would be more likely to believe anything he might hear about remarkable and unheard of results of invention than to disbelive. We hear that enormous chicken houses are electrically lighted in order to keep the hens at work more hours of the day, so they will lay more eggs, and we hear that a trout farm employs electric lights to attract the moths to the pool where the trout can catch them. We no longer doubt, but marvel. We hear of a radio pen that will broadcast pictures and maps, and the next day we see its results in the newspapers. Wherever there is a need, someone finds a way.

But the Machine Age has also brought many difficulties and problems. Man has had to key himself up to a more strenuous life with machines setting the pace. One of our gravest questions is: How can we prevent our machines from injuring or destroying us? One of the gravest problems is that this Machine Age often causes large numbers of men to be thrown out of work.

-Adapted from America and the New Frontier
Freeland, Adams
Pages 38, 41, and 42

This is the generalization: The Machine Age has made life happier, but it has also brought many difficulties and problems.

1. Write on your paper illustrations that show how the Machine Age has made life happier.

2. Write illustrations to show problems or difficulties created by the Machine Age.

Lesson XLI

Lesson XLV

This is the generalization: Nations make postage stamps to honor people and historic events.

The story for today gives one illustration showing how people and historic events are honored by being cast on postage stamps. As you read, think of other illustrations of this generalization.

Stamp Honors U. S.

Chungkumg, Jan.5.- (UP)- An issue of Chinese postage stamps Commemorating the 150th anniversary of the founding of the United States in 1789, when General George Washington was elected first President of the United States, has gone on sale here.

-Providence Evening Bulletin
January 6, 1940

On your paper write other illustrations of honoring people and events in this way.

Day-by-Day Planning

Definite routine for each day's lesson to develop habituated associational reading.-- Despite the variety of lesson content as shown in the chart, day-by-day procedure followed a definite routine. During the first part of each lesson responses to the previous drill were evaluated. This might be comparable to the apperceptive approach usually employed in lesson development, for it was here that the work of yesterday was made to lead into the work for today and suggestions were developed to modify future pupil reaction. Then followed a supervised study period during which mimeographed lessons prepared by the writer were used by the pupils to guide their reading. This gave opportunity for individual instruction to those who needed more guidance than the directions on the drill sheet. This procedure might be comparable to the developmental phase of a lesson. The last of the lesson period was used for class discussion. Here opportunity was given for the evaluation of responses. This might be comparable to the summary or application phase of a lesson.

Exceptions to this routine.-- Several exceptions were made to this routine during the experimentation.

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Exceptions to this routine.-- Several exceptions were made to this routine during the experimentation.

Three lessons were devoted to directed teaching through class discussion. On these occasions no drill sheets were used for individual application of the learning. These lessons might be orientation lessons used to introduce "units of work". Occasionally the drill sheets were collected at the close of the study period and prior to discussion. These gave basis for evaluating what had been accomplished and for determining future emphasis. This might be comparable to the use and analysis of test papers.

From all this it may be seen that a single lesson structure was developed for the day-by-day procedure. However, as in all good teaching-learning cycles, opportunity was present for adaptation as individual or group needs dictated.

Administration of the Re-Test

At the close of the ten-week teaching-learning cycle the initial test was re-administered to the 35 experimental pupils and the other 71 pupils within that system who had taken the initial test. The pupils in the other system used in the initial test were not re-tested because it seemed that comparison of the experimental group with

other members of the same system should provide data significant enough in its implications to answer the problem of the experiment. The initial test was re-used for two reasons: (1) In building a new test the chance element of finding selections identical with the first in type of content and in stimulative appeal would be practically insurmountable; (2) It was felt that growth in power could be most effectively measured by comparing the results of the same test administered before and after the directed teaching.

SUMMARY

A general survey of the evolution of the teaching-learning cycle discloses the following steps:

(1) The initial test was administered to 243 seventh grade pupils by supervisors of two comparable school systems. Due to consideration of possible variables, it was assumed that the two groups were as nearly equated as possible.

(2) Initial test results revealed a lack of power on the part of these pupils to think associatively while reading in the social studies field. It was decided to devise an experimental teaching-learning cycle to determine in how far the seventh grader could learn to read associatively in the social studies field.

(3) The experimental group was selected from one of the systems used in the initial test experiment. It was a heterogeneous class, consisting of

35 pupils who had satisfied initial test requirements in the matter of selection. They presented a normal distribution as to intelligence and chronological age; their socio-economic background was average.

(4) The teacher of the experimental group was able, professionally qualified, and willing to help, and was accustomed to teaching seventh grade social studies. Therefore, to keep the experiment as objective as possible, she was selected to execute the teaching-learning cycle.

(5) Experimentation with various methods indicated that the most effective technique to be employed would be the drill procedure.

(a) Daily lesson sheets followed a set pattern for each series, thus serving as drills for habit formation and concentrating attention on the skill to be gained.

(b) Daily lessons were so planned as to offer the necessary guidance in response at first, gradually withdrawing assistance until in the last lessons was demanded the same independent response as in the test itself.

(c) Concentrated attention was given to each series when first presented. This was intended to develop without interruption full understanding and habituated thought procedure for that particular type of associational reading.

(d) During the teaching of the second and third series drills on types previously taught were inserted. This applied the drill technique of attentive-repetition with gradual lengthening of time intervals between the lessons to promote mastery.

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(6) General principles of efficient teaching techniques were also applied:

(a) Daily lessons generally were organized according to the same procedure: (1) Teacher-directed discussion based on responses from previous lessons was intended to modify future pupil response. (2) Supervised study period was designed for the use of mimeographed lessons prepared by the writer and for individual instruction by the teacher. (3) Class discussion of responses served to apply the learnings of that day's lesson.

(b) As in all good teaching technique, daily method was determined by the pupil-need of the moment. Each of the three series was oriented by a teaching lesson (I, XV, and XXIX) to develop understanding of the type of associational reading about to be discussed. Also, discussion lessons were inserted for clarification, and testing technique was used occasionally as a means of measuring growth in power as the teaching-learning cycle progressed.

(7) Each series contained approximately the same number of lessons,- 18 question-activity, 15 illustration-of-a-specific idea, and 12 illustration-of-a-generalization type. Fewer drills for the two illustration series was justifiable in that their similarity of type produced a certain amount of transfer.

(8) A balance was maintained among the three knowledge areas of social studies involved,- 16 history, 14 geography, and 13 current events selections being used,

(9) After the ten-week teaching-learning cycle had been completed the initial test was re-administered to the 35 experimental pupils.

(b) General principles of efficient teaching techniques were also applied:

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As a basis for measuring the effect of the directed teaching, the test was also given again to the other 71 pupils in that same system who had taken the first test who thus served as a control group.

CHAPTER IV

DETERMINING SCORING STANDARDS

Two Scoring Objectives

Since the test used was originated by the writer it was necessary to devise standards for scoring pupil responses. These responses were to be totaled in quantitative terms. This would measure how much the seventh grader reads associatively in the social studies field.

Examination of responses showed the presence of great diversity in types of answers. This fact suggested the feasible significance of evaluating responses by some qualitative measure as well as by the quantitative. Such data might give answers to questions like the following:

(1) Which kind of response occurs most frequently?

(2) How do sex differences influence responses?

(3) How does level of intelligence influence responses?

(4) What kinds of responses dictate emphasis for future teaching?

General Procedure Common to All Series

The following procedure was used in establishing

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General Procedure Common to All Series

The following procedure was used in establishing

both the quantitative and qualitative standards for scoring:

(1) Listing typical responses from a sampling of tests

(2) Sorting similar responses into categories

(3) Analyzing the characteristics common to each category

(4) Re-reading the sampling

(5) Re-sorting the selected responses

(6) Determining symbols for scoring

(7) Scoring responses on all the tests

(8) Recording responses on the original master sheet

(9) Totaling responses in tabulated form

Analysis of Inacceptable Responses

Responses were classified according to their degree of acceptability. Inacceptable responses were of several types--those where meaning was unintelligible, or where the answer given showed no conception of the associations to be made during the reading, or where there was a reiteration of an idea previously stated.

Series I (Exercises I, II, III) measured two phases of associational reading, expression activities suggested

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Series I (Exercises I, II, III) measured two phases of associational reading, expression activities suggested

and questions raised by the printed word. Responses of expression activity in this series were inacceptable when they closely resembled any one of the following samples:

(1) Some understanding that "activity" means "action", but no conception of the mental planning characteristic of acceptable activity, such as--

(a) Name a place where pirate tales are told.
(b) Write on a piece of paper the name of the youngest textile industry.
(c) Find Long Island on the map.

(2) Action suggested in the selection, but not activity suited to a child's self-expression, such as--

(a) Making cloth and fixing the machines.
(b) Flying great airplanes across the great Atlantic.
(c) A plane going out of sight.

(3) Selection of words or phrases from the reading which suggest action, such as--

(a) Gangsters.
(b) The cold blooded killing for gold and jewels.
(c) Burying treasure.

(4) Responses given in question form, or restatement of ideas found in the selection, such as--

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(a) Was there much of this manufactured before these firms were built.
(b) Who was the first to start the pirates.
(c) They chased the pirates away.

Responses which raised questions were inacceptable when they closely resembled any one of the following samples:

(1) Confusion between raising questions and suggesting activities, such as--

(a) I would like to go down South to see the cotton plantation.
(b) Name some books you have read about pirates.

(2) Restatement of facts found in the selection, such as--

(a) Port Washington is a port in New York.
(b) Only five persons made the commercial transatlantic flight.

(3) Restatement of words found in the selection, such as--

(a) Cotton
(b) Southhampton

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(1) Exercise IV measured power to illustrate the "use of strategy" in various situations. Many responses interpreted "use of strategy" to mean "purpose behind strategy." Therefore, responses which failed to describe illustrative situations were inacceptable, such as--

(a) To understand the teacher.
(b) To make them surrender.
(c) He used strategy to save the person that is paying him money.

(2) Exercise V, asking for illustrations wherein fire prevention can be used, stimulated readily acceptable responses.

(3) Exercise VI asked for "ways in which science may help mankind in the future." Inacceptable responses were--

(a) By helping others.
(b) It may help to make lives happier in the future.
(c) By still making new experiences.

Series III (Exercises VII, VIII, IX) measured the use of experiential knowledge to illustrate a generalization. A common characteristic of inacceptable responses was the use of vague generalities.

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(1) Exercise VII measured power to illustrate the generalization "Defeat can be made a step toward success."

(a) People take all the money they have saved to earn success.
(b) On a baseball team.
(c) When you're in some club.

(2) Exercise VIII measured power to illustrate the generalization "No worker today is as independent as in the early days of our country.

(a) Now most of our things are bought.
(b) If independent you may not get a good price and not sell much of it yourself.

(3) Exercise IX measured power to illustrate the generalization "Conditions throughout the world are constantly changing. Therefore our books must be changed often."

(a) Things are happening so quick that its change everything around.
(b) Each year thousands of books are changed.
(c) History books have to be changed because every day history is being made.

(4) Two problematic deviations occurred. In Exercise VII responses gave philosophical advice instead of illustration, such as--

(a) If you do not succeed at first, try, try, try again.
(b) People succeed because they try.
(c) You must have deturmantion.

(5) In Exercise VIII responses became statement of fact rather than illustrative situations comparable to those in the selection, such as--

(a) United States must have vegetables.
(b) If the modern worker or farmer devoted half as much time in raising all the products he needs instead of buying and raising he'd economize that much more.
(c) The average farmer, I think, has a much better chance of living than the early farmers because there is much more products being raised and sold to many more transports and markets today than ever before.

Analysis of Responses Difficult to Evaluate

The test was constructed so as to permit the pupil both free mental play upon the ideas in the selection and absolute freedom in the expression of his associational thinking. This freedom in thinking made establishment of scoring standards difficult. Poor command of the English language produced vague and confusing phraseology in many responses. By careful analysis of many responses it was possible to define the

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standards for each category and in this way to assure some degree of consistency in the scoring. Even after typical responses had been established as standards, the great variety of expression presented a constantly recurring problem. Effort was made to score only associational thinking by placing emphasis upon the content of the response regardless of the form of its expression.

Clarity of expression was a prime requisite for scoring. If the content was clear the response was evaluated. In this way many very poorly phrased responses were given credit. The following illustrate some responses where evaluation was problematic:

(a) Go to one of theis factorys a watch how the machien are runned.
(b) About how long was it started it would reach England?
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Acceptable responses showed clear conception of the association to be made during the reading. The quantitative totals of each series measured in how far the pupils made spontaneous associations while reading.

The qualitative totals presented some additional implications for future teaching. Thus all acceptable responses were measured quantitatively and classified qualitatively.

It will be recalled that Series I was designed to measure in how far the seventh grader uses his social studies reading as a stimulus for activity. Examination shows this reaction to have two aspects--expression through activity and questioning for further research. For clarity the two aspects are presented separately.

Suggestions for Activities

One purpose was to measure the number of associations of expression activity made. The other purpose was to evaluate the quality of these associations. From the latter purpose several questions arose:

(1) What kind of expression activities does the seventh grader conceive?

(2) Does he show any preferences in activity types?

(3) What influence is exerted by differences in sex and intelligence?

(4) Does any one type show need of emphasis in future teaching?

Therefore, to evaluate quality acceptable responses

were placed in four classifications--unclassifiable, manipulative, intellectual, and creative.

(1) The term "unclassifiable" as herein used, includes those unclassifiable responses satisfying the criterion of acceptability, yet confused in phraseology. Directions common in these responses were "show", "make", "explain", and "illustrate". "Show" might have been synonymous with "draw","display", or "point out". If "draw" was intended, the response would have been classified "creative." If "display" was intended, the response would have been classified "intellectual." If "point out" was intended, the response would have been classified "inapplicable", for no activity is implied. The following responses illustrate what was accepted as a typical unclassifiable activity:

(a) Illustrate what a pirate captain would do to a traitor.
(b) Visit Governor Spotswood of Virginia.
(c) Make a beanstalk and show how fast the textile industry grew.
(d) Draw a picture of the country which manufactures supplies rayon.

(2) Manipulative Activities. The term "manipulative" as herein used has this interpretation: Use of a physical skill without the employment of creative effort. This category of responses included activity suggestions such as "make a map" or "make a plastecene model." The following responses illustrate what was accepted as a typical manipulative activity:

(a) Collect different pictures of pirates.
(b) Draw a map of places visited by Blackbeard and his men.
(c) Make some modles out of soap.
(d) Try to get a cotton brance with some cotton on it.

(3) Intellectual Activities. The term "intellectual" as herein used has this interpretation: Mental assimilation and comprehension as the result of such an activity as reading the printed page or observing a machine in motion. That is to say, when no manipulative or physical effort is made in the storing up of knowledges, appreciations, or attitudes the activity in dominantly intellectual. For instance, in "attending a moving picture" or "arranging a display" mental activity dominates all other

types which are involved and can therefore be classified as "intellectual." The following responses illustrate what was accepted as a typical intellectual activity:

(a) Read the story of Treasure Island.
(b) Get some rayon and look at it with a microscope.
(c) Make a list of instruments used by pilots and inspect them.
(d) Ask a pilot some of the difficulties of flying when the weather is poor.

(4) Creative Activities. The term "creative" as herein used has this interpretation: Implication that the child has given himself spontaneously to a constructive activity which is not directly imitated. That is to say, creative activity may employ both familiar ideas and new concepts, or it may merely reorganize several familiar concepts. For instance, a pupil may have already experienced the creation of some dramatization, but in applying this skill to new content he may easily introduce the element of originality. The following responses illustrate what was accepted as a typical creative activity:

(a) Have a freeze made of pirate activities.
(b) Learn an old pirate song.
(c) Tell a story of the beginning of this industry.
(d) Make a diagram of wool, cotton, silk, flax, and rayon at their value of 5 years ago today.

(B) Questions for Further Research

One purpose of this section was to measure the number of questions the seventh grader associates with his social studies reading. The other purpose was to evaluate the quality of the associations made. From this latter purpose several questions arose:

(1) What kinds of questions does the seventh grader conceive?

(2) What kind of question occurs most frequently?

(3) What influences are exerted by differences in sex and in intelligence?

(4) Does any one type show need of emphasis in future teaching?

Therefore in order to evaluate quality, acceptable questions were placed in four classifications--inconsequential, clarifying, immature, and enriching.

(1) Inconsequential Questions. The term "inconsequential" as herein used includes those questions

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Therefore in order to evaluate quality, acceptable questions were placed in four classifications--incon-sequential, clarifying, immature, and satisfying.

(1) Inconsequential Questions. The term "inconse-quential" as herein used includes those questions

where the associational value was so slight that they did not clarify or enrich the selection. That is to say, such questions as "Who built the plane?" and "How do they kill the silkworm?" failed to clarify thought or to use experiential knowledge in probing the content. The following responses illustrate what was accepted as a typical inconsequential question:

(a) Were they around Maine very much?
(b) Is it easy to cut (rayon)?
(c) What happened to Jack's beanstalk?
(d) Why didn't the plane leave later than 8:25?

(2) Clarifying Questions. The term "clarifying" as herein used has this interpretation: Indication of poor inter-association of facts given in the story. That is to say, some questions could have been answered with data quoted directly from the test-selection itself, or through original conclusions based upon data given in that selection. Such questions made no application of experiential knowledge; they merely helped to promote comprehension

rather than to enrich interpretation. The following responses illustrate what was accepted as a typical clarifying question:

(a) What made Captain Kidd, Morgan, and Blackbeard rascals?
(b) Were all of them ready to kill for gold?
(c) Why is it only a baby compared with the rest?
(d) Why was this flight made?

(3) Immature Questions. The term "immature" as herein used has this interpretation: Developing the significance of the selection without actual enrichment of the thought. That is to say, by further analyzing the situation or by using his experiential knowledge tha pupil could probably have answered his own question. For instance, analysis could have answered the question "Why did some governors protect them (pirates)? Also, experiential knowledge could have answered the question "Where is Long Island Sound?" The following responses illustrate what was accepted as a typical immature question:

(a) What is a sound?
(b) What does it mean-rayon grows fast as Jack's beanstalk?
(c) What does textile manfacturing mean?
(d) Why are so many newspaper and magazine reporters on board the plane?

(4) Enriching Questions. The term "enriching" as herein used has this interpretation: Extension of knowledge or depth of appreciation. That is to say, the pupil by comparative association between the content of the test selection and his own experiential knowledge raised thought-provoking questions. Such questions as "What is its cruising range?" and "Do you think it will be a good route across the Atlantic?" show definite use of experiential knowledge to enrich the content of the test-selection. The following responses illustrate what was accepted as a typical enriching question:

(a) How the pirates differ with the gangsters of today.
(b) Were they taking a chance (in building a rayon factory)?
(c) Are American scientists trying to make some cloth more important than rayon?
(d) Is the Yankee Clipper bigger than the China Clipper?

(c) Illustrating a Specific Idea and a Generalization.

In Series II the major objective was to measure the seventh grader's spontaneous use of experiential knowledge to illustrate specific ideas presented in his social studies reading. In Series III the objective was to measure the extent to which use is made of experiential knowledge to illustrate generalizations. The same standards for scoring were acceptable due to the similarity of the two series. This permits the discussion to include both series at one and the same time.

As in Series I, examination of responses showed the desirability of qualitative as well as quantitative measurement. The illustrations given by pupils evidenced restricted ability. In fact, the limited vision shown dictated the wisdom of evaluating maturity of power rather than differences in kinds of responses. The questions which arose were:

(1) With what degree of skill does the seventh grader illustrate his social studies reading from his own experiential knowledge?

(2) How does the level of intelligence influence responses?

(3) Wherein does this reading skill show need of emphasis in future teaching?

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(1) With what degree of skill does the seventh grader illustrate his social studies reading from his own experiential knowledge?

(2) How does the level of intelligence influence responses?

(3) Wherein does this reading skill show need of emphasis in future teaching?

Therefore, to evaluate quality acceptable responses were placed in five classifications--indefinite, incompatible, inadequate, general, and specific.

(1) Indefinite Illustrations. The term "indefinite" as herein used has this three-fold interpretation: Vague or general in phraseology, fragmentary in language, or imitative in content. For instance, it was difficult to determine depth of pupil comprehension from such a response as "The mother often uses Strategy to tell whether you are in bed or not." Frequently a pupil illustrated by the use of a problem situation, but failed to include its solution, as "Science help some men to get a living." The pupil should have included such a phrase as "- by giving the farmer chemical fertilizers to enrich his soil." Then again, pupils made responses clearly suggested in the selection rather than to employ experiential knowledge, as "When a woodsman goes out to get some wood he often leaves the branches there." The following responses illustrate what was accepted

as typical indefinite questions:

(a) Vague, general in phrasing, as shown in--

/1/ Exercise IV-The police use strategy in the way they catch gangsters who might harm the people.
/2/ Exercise V-****
/3/ Exercise VI-They have discovered important formulars.
/4/ Exercise VII-Columbus voyage was a defeat turned to success.
/5/ Exercise VIII-They can depend on the farmers.
/6/ Exercise IX--In our geography books because of the wars the land is constantly changing therefore the maps in them will have to be changed.

(b) Fragmentary in language, as shown in--

/1/ Exercise IV-In baseball the batter uses strategy before he swings.
/2/ Exercise V-****
/3/ Exercise VI-It gave some people a job.
/4/ Exercise VII-When you are defeated in a debate, etc., don't get sore maybe this will make you famous as it did Lincoln.
/5/ Exercise VIII-Farmers today have more working tools than they did years ago.
/6/ Exercise IX-Men in the government are giving up them jobs because of the wars so books will have to be changed.

****Samplings are omitted from those Exercises where the items under discussion did not appear.

(c) Imitative in content, as shown in--

/1/ Exercise VII-****
/2/ Exercise V--Do not throw matches or cigaretts in the woods.
/3/ Exercise VI--It built diving suits for underwater.
/4/ Exercise VII-****
/5/ Exercise VIII-****
/6/ Exercise IX-****

(2) Incompatible Illustrations. The term "incompatible" as herein used has this interpretation: Failure to show relationship between the response and the concept being illustrated. That is to say, though the response satisfied the criteria for an acceptable illustration, it showed the pupil had failed to comprehend the exact idea to be illustrated. For instance, "By knowing your lesson when the teacher calls on you" shows failure to understand the meaning of "strategy." Also, "We will need a machine for plowing the fields" indicates failure to understand the meaning of interdependence. These "incompatible" responses occurred particularly in Exercises IV and VIII. In Exercise IV the response page asked for

****Samplings are omitted from those Exercises where the items under discussion did not appear.

(c) Initiative in content, as shown in--

\1\ Exercise VII-****
\2\ Exercise V--Do not burn matches
or cigarettes in the woods.
\3\ Exercise VI--It could drive suits
for underwater.
\4\ Exercise VII-****
\5\ Exercise VIII-****
\6\ Exercise IX-****

(2) Incomprehensible Illustrations. The term "incomprehensible" as herein used has this interpretation:
Failure to show relationship between the
response and the concept being illustrated.
That is to say, though the response satisfied
the criteria for an acceptable illustration,
it showed the pupil had failed to comprehend
the exact idea to be illustrated. For instance,
"By knowing your lesson when the teacher calls
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****Samplings are omitted from these Exercises

illustrations of the "use of strategy" in various situations. In Exercise VIII illustrations were to be made applying the generalization, "No worker is as independent today as in the early days of our country." Both of these concepts provoked many responses which were incompatible with the principle to be illustrated. The following responses illustrate what were accepted as a typical incompatible illustration:

(a) Exercise IV--Strategy could be used by making yourself well-known or popular if you want to be elected to anything.
(b) Exercise VIII--A company making bottles with rubber tops depend upon rubber companies to supply them with tops for the bottles.

(3) Inadequate Illustrations. The term "inadequate" as herein used has this interpretation: Illustration of only one phase of a two-fold generalization. Analysis of responses in Exercise VIII, which dealt with an involved generalization, disclosed a scoring problem peculiar to this exercise. The response page called for illustrations of the generalization,

"No worker today is as independent as in the early days of our country." It is apparent that this generalization involves a two-fold concept--the meaning of the term "interdependence" and the contrast between modern interdependence and colonial independence, Responses illustrated one concept, but not both. These responses were appropriate in content and illustrated one concept perfectly. Therefore they were not "incompatible"; yet they were not complete. They might have been classified as indefinite but it was decided, simply as a matter of interest, to create the new grouping--"inadequate." The following responses illustrate what was accepted as a typical inadequate illustration:

(a) If one farmer raises vegetables and nothing else and another rases hogs and cows and nothing else. These two farmers can't live with-out the help of each other.

(b) The U.S. has to depend upon other countries for some things as: tin, rubber, bannas, some oil such as olive oil, some applies, vegetables, platinum and other things. Also other countries depend upon us for much nescessities.

(a) If one farmer raises vegetables and
nothing else and another raises hogs
and cows and nothing else, these two
farmers can't live with-out the help
of each other.

(b) The U.S. has to depend upon other
countries for some things as: tin,
rubber, bauxe, some oil such as olive
oil, some apples, vegetables, platinum
and other things. Also other countries
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(c) Textle works lean on the farmer for support and farmer lean on them for cloth
(d) The city lean on the people for taxes white the people leam on the city to ecquate there children.

(4) General and Specific Illustrations. The terms "general" and "specific" as herein used have their usual connotations. The term "general" was applied to those responses in which the content was applicable and the relationships, although clearly discernible, were stated in general phraseology. The term "specific" was applied to those responses in which clear, pertinent phraseology was used. For instance, a "general" illustration is such a response as "Science has helped us by making or discovering different medicines which help us." A more specific statement of the same response is "The iron lung has help people to breath which have bad lung or have been effected by some diease." The following responses illustrate what was accepted as typical general and specific illustrations:

(a) Textile works lean on the farmer for support and farmer lean on them for cloth

(d) The city lean on the people for taxes while the people lean on the city to educate there children.

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(a) General

/1/ Exercise IV--They wait until the other nations are not ready for ware then they take what they want.
/2/ Exercise V--Be very careful of boiling grease fat.
/3/ Exercise VI--Science may rid the U.S. of Japanese Beetles.
/4/ Exercise VII--The man that tried to put a cable across the Pacific failed a few times but didn't give up till he won out.
/5/ Exercise VIII--In the early days of our country the farmers had to get ideas and make their own farm tools while the modern farmer buys the ones he needs.
/6/ Exercise IX--Some of our books will be changed of President Roosevelt run for a third term.

(b) Specific

/1/ Exercise IV--In baseball a pitcher throws a fast ball and the batter thinks he will throw slow ball he throws another fast ball or a curve.
/2/ Exercise V--Be sure electrical appliances are not about to short or blow.
/3/ Exercise VI--Through science tests the building of the Panama Canal was brought about Yellow Fever had stopped them.
/3/ Exercise VI--The firemen have espestis suits and can go into fire and bring people out.

(a) General

/1/ Exercise IV--They wait until the other nations are not ready for war then they take what they want.

/2/ Exercise V--Be very careful of boiling grease jet.

/3/ Exercise VI--Science may rid the U.S. of Japanese Beetles.

/4/ Exercise VII--The man that tried to put a cable across the Pacific failed a few times but didn't give up till he won out.

/5/ Exercise VIII--In the early days of our country the farmers had to get ideas and make their own farm tools while the modern farmer buys the ones he needs.

/6/ Exercise IX--Some of our books will be changed of President Roosevelt run for a third term.

(b) Specific

/1/ Exercise IV--In baseball a pitcher throws a fast ball and the better batsmen he will throw slow ball he throws another fast ball or a curve.

/2/ Exercise V--Be sure electrical appliances are not about to short or blow.

/3/ Exercise VI--Through science tests the building of the Panama Canal was brought about Yellow Fever had stopped them.

/4/ Exercise VI--The firemen have asbestis suits and can go into fire and bring people out.

/4/ Exercise VII--In England when the pilgrims were denied a religious freedom they went to Holland but their children become to talk dutch so they finally met success after defeats and disappointments when they went to America.
/5/ Exercise VIII-****
/6/ Exercise IX--If we looked in certain books to tell us the population corn and wheat production ect, compared with foreign countries to ours the figures would probably a little wrong since more people are being born.

SUMMARY

From the foregoing it may be seen that the object of this study was to measure the extent to which the seventh grader reads associatively in the social studies field. Preliminary examination of responses showed great diversity in answer-types. This suggested the possible value of analyzing responses qualitatively as well as quantitatively. Therefore scoring standards were devised to measure a two-fold objective: How much spontaneous associational reading is practiced by the seventh grader in the social studies field? What is the quality of such associations?

****Samplings are omitted from those Exercises where the items under discussion did not appear.

\4\ Exercise VII--In England when the pilgrims were denied a religious freedom they went to Holland but their children became to talk dutch so they finally met success after defeats and disappointments when they went to America.

\5\ Exercise VIII-****

\6\ Exercise IX--If we looked in certain books to tell us the population corn and wheat production etc. compared with foreign countries to ours the figures would probably a little wrong since more people are being born.

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****Samplings are omitted from those Exercises where the items under discussion did not appear.

To meet these objectives, classification of responses into several categories was necessary.

Inacceptable responses were of several types--those where meaning was unintelligible, or where the answer given showed no conception of the association to be made during the reading, or where there was a reiteration of ideas previously stated by the pupil.

The total responses in the expression-activity series should reveal in how far the seventh grader associates expression activities with social studies reading. By qualitative differentiation it was hoped to determine the following:

(1) What kind of expression activities does the seventh grader conceive?

(2) Does he show any preference in activity types?

(3) What influence is exerted by differences in sex and intelligence?

(4) Does any one type show need of emphasis in future teaching?

Responses were classified into four groupings--unclassifiable, manipulative, intellectual, and creative. "Unclassifiable" included those responses stated in terms so general as to indicate no particular type.

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(4) Does any one type show need of emphasis in future teaching?

Responses were classified into four groupings--unclassifiable, meaningless, intellectual, and creative. "Unclassifiable" included those responses stated in terms so general as to indicate no particular type.

"Manipulative" activities were those which indicated use of routine skills or those in which physical activity predominated. "Intellectual" responses were characterized by dominance of mental activity. "Creative" activities involved some original element.

The total responses in the questioning series should reveal in how far the seventh grader associates questions with his social studies reading. By qualitative differentiation it was hoped to determine the following:

(1) What kinds of questions does the seventh grader conceive?

(2) What kind of question occurs most frequently?

(3) What influences are exerted by differences in sex and intelligence?

(4) Does any one type show need of emphasis in future teaching?

Responses were classified into four groupings--inconsequential, clarifying, immature, and enriching. "Inconsequential" was comprised of those questions which offered nothing to the interpretation of the selection, and therefore could not be classified in the other categories. "Clarifying" questions merely served to explain ideas already stated or suggested in the selection. "Immature" questions included those which

would have been enriching, but which could have been answered by association of ideas in the selection or from experiential knowledge. "Enriching" included those which used experiential knowledge as a basis for formulating the response, but which could not be answered except by further research.

The total responses in both illustration series should reveal in how far the seventh grader uses his experiential knowledge to illustrate ideas and generalizations in his social studies reading. By qualitative differentiation it was hoped to determine the following:

(1) With what degree of skill does the seventh grader illustrate his social studies reading from his own experiential knowledge?

(2) How does the level of intelligence influence responses?

(3) Wherein does this reading skill show need of emphasis in future teaching?

Responses for Series II and III were classified into these five categories--indefinite, incompatible, inadequate, general, and specific. "Indefinite" included those too general or too incomplete to classify.

Responses for Series II and III were classified in these five categories--indefinite, incompatible, inadequate, general, and specific. "Indefinite" included responses which were vague or general in phraseology, fragmentary in language, or imitative in content. "Incompatible" showed failure to understand the concept being illustrated. "Inadequate" illustrated only one phase of a generalization with a two-fold concept. "General" were appropriate and complete in content, but couched in general phraseology. "Specific" included those which were appropriate and complete in content, and couched in clear pertinent phraseology.

CHAPTER V

FINDINGS OF INITIAL TEST

Review of Procedure

Selection of content and types of associational reading.-- The original purpose of this investigation was to determine in how far the seventh grader practices spontaneous associational thinking while reading in the social studies field. This spontaneous association was broken down into three phases-- (1) stimulation to both self-expression through activity and questioning for further research; (2) use of experiential knowledge to illustrate a specific idea; and (3) use of experiential knowledge to illustrate a generalization. To measure free associational reading in these three phases it was found necessary to build an original test. The test was administered to 243 seventh grade pupils, 106 from one city school system, and 137 from another.

Development of teaching-learning cycle, retest for evaluation of results and establishment of scoring standards.-- Preliminary examination of test results

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Development of teaching-learning cycle, retest for evaluation of results and establishment of scoring standards.-- Preliminary examination of test results

indicated that pupils showed little ability to do free associational reading. Therefore, a teaching-learning cycle was devised with its chief aim that of developing this reading skill. This teaching-learning cycle was used with a class of 35 pupils who served as the experimental group. The remaining pupils in this particular system, 71 in number, served as the control group and were not given any instruction in free associational reading. At the close of a ten-week period all 106 pupils were given the original test.

Cursory examination of test results indicated the value of studying kind of response as well as number of response. Thus it happened that responses were measured quantitatively and classified qualitatively.

Description of the Population

Socio-Economic Status.-- A total of 300 pupils was tested in the initial administration of the test. It was possible to use data from 243 cases in the final scoring. These pupils were attending schools in two systems where teaching methods were comparable.

Familiarity with both schools showed neither to be ultra-progressive. However, both attempt to utilize practices based upon modern educational theory. The pupils also appeared to be relatively equal in their wide range of socio-economic background. They represented in large measure children whose fathers could afford to rear their families in a surburban area. There were also those whose fathers were factory-workers, and those whose economic income was quite precarious. The national heritage was typical of the American "melting-pot," no one group predominating.

Distribution of Intelligence.-- Intelligence and chronological age were also considered in the selection of these pupils. One form of the Kuhlmann- Anderson Tests[1/] were administered for measuring intelligence, and the results for the 243 cases were tabulated as in Table I, Original Tabulation of Intelligence Quotients for 243 Pupils. From these figures were computed the measures of central tendency and variability shown in Table II, Distribution of Intelligence Quotients for the 243 Pupils.

1/ Kuhlmann-Anderson Tests, Grade VI, Published by Educational Test Bureau, Inc., Philadelphia, 1927.

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Table I. Original Tabulation of Intelligence Quotients for 243 Pupils

135-139							
130-134			1	1			2
125-129				1	2		3
120-124				1	4		5
115-119			2	3	4	3	12
110-114		1	3	1	7	3	15
105-109	3	1	4	3	4	11	26
100-104	7	6	5	10	10	15	53
95-99	2	3	5	6	18	12	46
90-94	4	1	9	1	8	13	36
85-89	4		5	4	7	1	21
80-84	3		1	4	6	2	16
75-79				1	5	1	7
70-74							0
65-69							0
60-64							0
55-59						1	1
Totals	23	12	35	36	75	62	243

Table II. Distribution of Intelligence Quotiests for 243 Pupils

Group	No. Cases	Range	Mean	S. D.	S. E.
Entire	243	55-134	99.40	11.20	0.72
Experimental	35	80-114	97.80	7.85	1.34
Control A	71	75-134	101.25	11.95	1.39
Control M	137	55-134	99.40	11.50	0.98

These data indicate the distribution to be normal, with the mean of 99.40. The standard deviation of 11.20 showed that 68 percent of the cases had an intelligence quotient between 88.20 and 110.60. With one exception (an intelligence quotient of 56) the range of 75-134 gave a spread from low normal to superior.

In Table II also are given the central tendencies of the three groups separately--Experimental, or the 35 pupils used in the teaching experiment; Control A, or the 71 pupils in the same system used as a control group in the retest; and Control M, or the 137 pupils from the other school system used in the initial test.

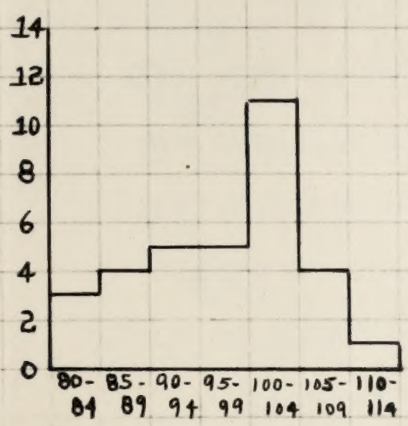


Figure 5 Experimental

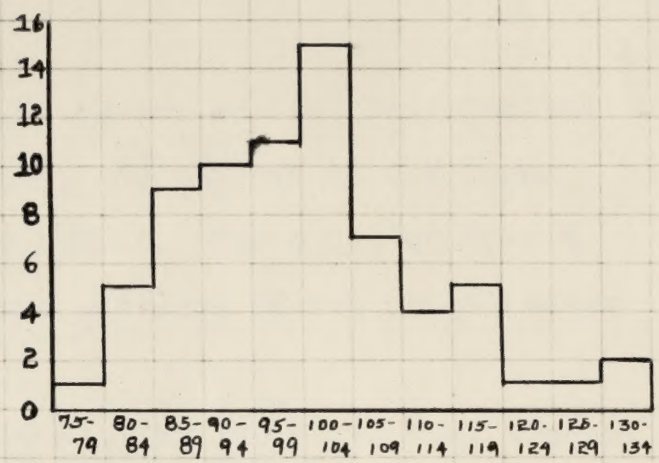


Figure 6. Control A

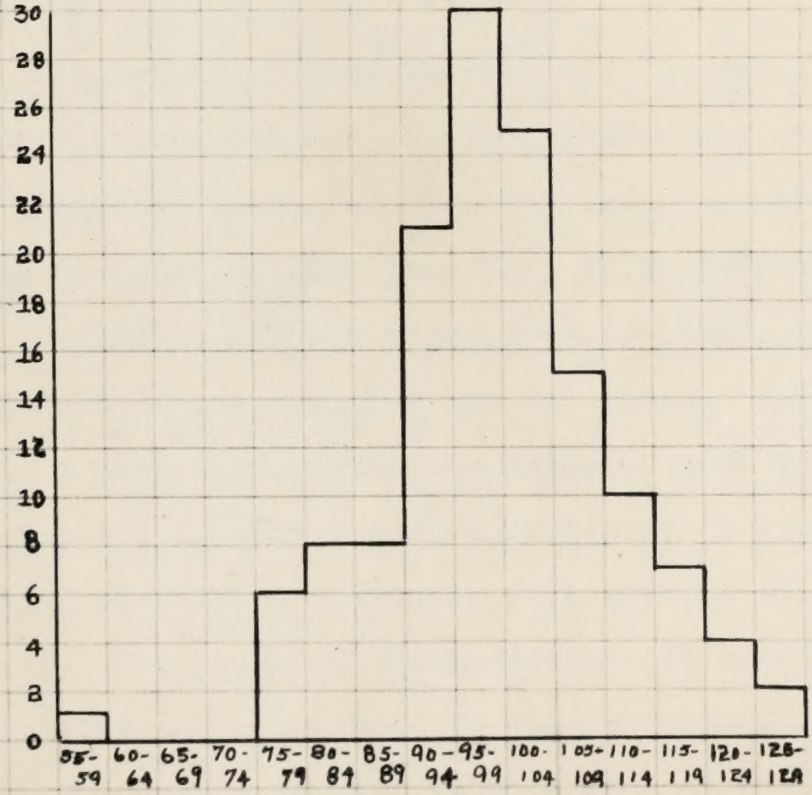


Figure 7. Control B

DISTRIBUTION
OF
INTELLIGENCE QUOTIENTS

The mean of 97.80 ± 7.85 indicates that Experimental was normally distributed; 68 percent of the cases fall between 89.95 and 105.65. The range of 80-114 (Figure 5) indicates the presence of low normal cases but no superior ones.

The mean of 101.25 ± 11.95 indicates that Control A also presented a normal distribution; 68 percent of the cases fall between 89.30 and 113.20. The range of 75-134 (Figure 6) shows a spread from low normal to superior.

Comparison of Experimental and Control A data reveals that means and standard deviations of both are similar. The upper limit of the range of Control A rises 20 points higher than that of Experimental.

Control M shows a mean of 99.40±11.50, identical with that of the mean for the 243 cases. Approximately it is a midpoint between the means of both Experimental and Control A. The standard deviation of 11.50 indicates that 68 percent of the cases fall between 87.90 and 110.90. The range of 55-134 (Figure 7) shows the level of intelligence to extend to greater limits than

Experimental. However, the range compared with Control A shows its lower limit to be 20 points lower and its upper to be nearly identical. Thus the data show all groups to be nearly comparable in distribution of intelligence.

Distribution of Chronological Ages.-- Table III, Original Tabulation of Chronological Ages for 243 Pupils, shows the distribution of chronological ages for all pupils. From these figures were computed the measures of central tendency and variability shown in Table IV, Distribution of Chronological Ages for 243 Pupils. It will be noted that the mean for the 243 cases is 13.38 ± 1.15 years; 68 percent of the cases fall between 12.23 and 14.53. Comparison of Experimental and Control A data shows a difference of 0.03 in the mean. In Experimental, with mean of 13.39 ± 0.95, 68 percent of the cases fall between 12.44 and 14.34; in Control A, with mean of 13.36 ± 0.98, 68 percent fall between 12.38 and 14.34. The range of Experimental extends from 12 to 15 (Figure 8), that of Control A from 11 to 16 (Figure 9). In the distribution of chronological ages the two groups are quite similar.

Table III. Original Tabulation of Chronological Ages for 243 Pupils

17	0	0	0	0	0	1	1
16	0	0	1	3	2	0	6
15	3	0	3	0	9	4	19
14	4	1	4	3	15	7	34
13	9	3	12	14	12	20	70
12	7	8	12	15	32	28	102
1							
11	0	0	3	1	5	2	11
Totals	23	12	35	36	75	62	243

Table Iv. Distribution of Chronological Ages for 243 Pupils

Group	No. Cases	Mean	S.D.	S. Em.	Range
Total	243	13.38	1.15	.07	11-17
Experimental	35	13.39	.95	.16	12-15
Control A	71	13.36	.98	.12	11-16
Control M	137	13.38	1.19	.10	11-17

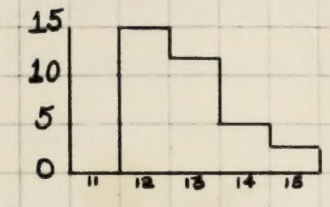


Figure 8. Experimental

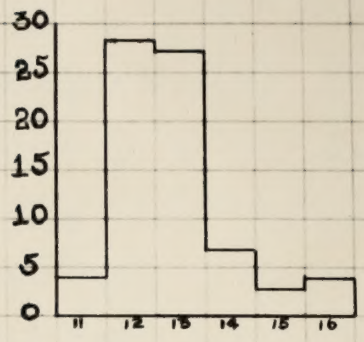


Figure 9. Control A

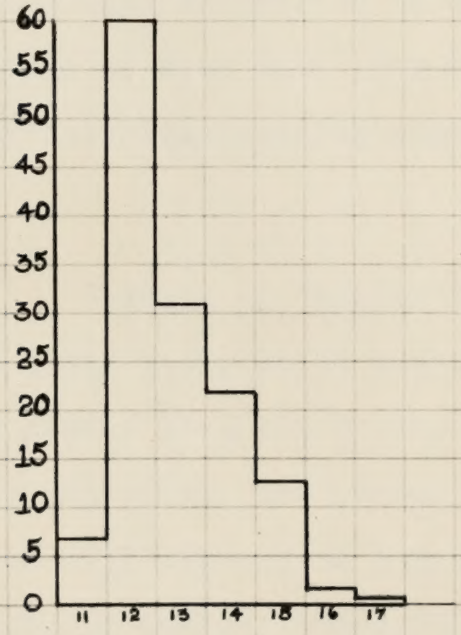


Figure 10. Control M

DISTRIBUTION
OF
CHRONOLOGICAL AGE

The mean for Control M is 13.38 ± 1.19; 68 percent of the cases fall between 12.19 and 14.57. The differences in all these means are negligible. However, in Control M the upper limit of the range extends to 17 (Figure 10); the lower limit remains at 11, the same as Control A.

From the foregoing discussion, it may be seen that variables were restricted in so far as possible. Effort was made to keep data from the initial testing and from the teaching-learning experiment a true sampling.

Results of Initial Test

Series I was designed to measure in how far the seventh grader uses his social studies as a stimulus for activity. Two phases of this reaction were measured--(1) expression through activity and (2) questions for further research. For clarity the two aspects are discussed separately.

(A) Suggestions for Activities

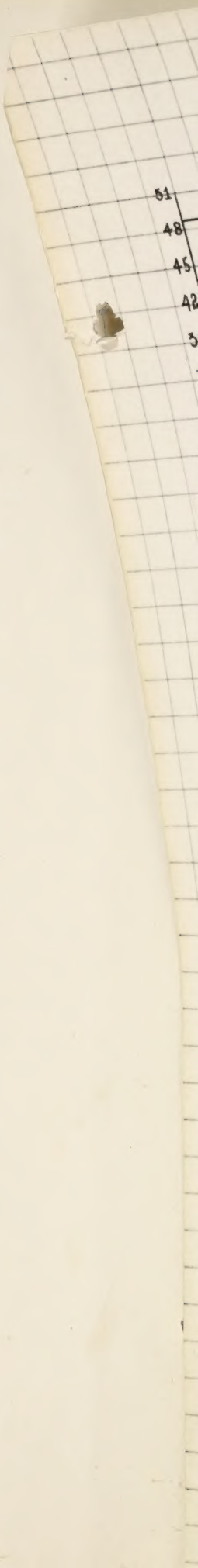
Analysis of Acceptable Responses.-- One objective was to measure how much the seventh grader finds

suggestion for expression activity in his social studies reading. To meet this objective, it was necessary to total raw scores. Tabulations of these scores are in the Appendix, pages 106a-115a. Table V, Pretest Totals of Activity Responses, gives the measures of central tendency and variability computed for the 243 pupils. The mean of 9.54 ± 5.70 indicates that 68 percent of the cases have a score between 3.84 and 15.24. The histogram in Figure 11 shows a broad spread of 0-29; concentration occurs in the interval 0-2.

Table V. Pretest Totals of Activity Responses

Group	No. Cases	Range	Mean	S.Dm.	S.Em.
Entire	243	0-29	9.54	5.70	0.37
Experimental	35	0-20	7.92	5.16	0.87
Control A	71	0-26	8.94	5.37	0.64
Control M	137	0-29	10.32	5.46	0.47

Nine associations of activities within a brief reading period may seem a large number. However, the mean for association of questions is 14.05 ± 5.46, a much larger response than for activity associations. Also, concentration in the interval 0-2 indicates failure


51
48
45
42
3

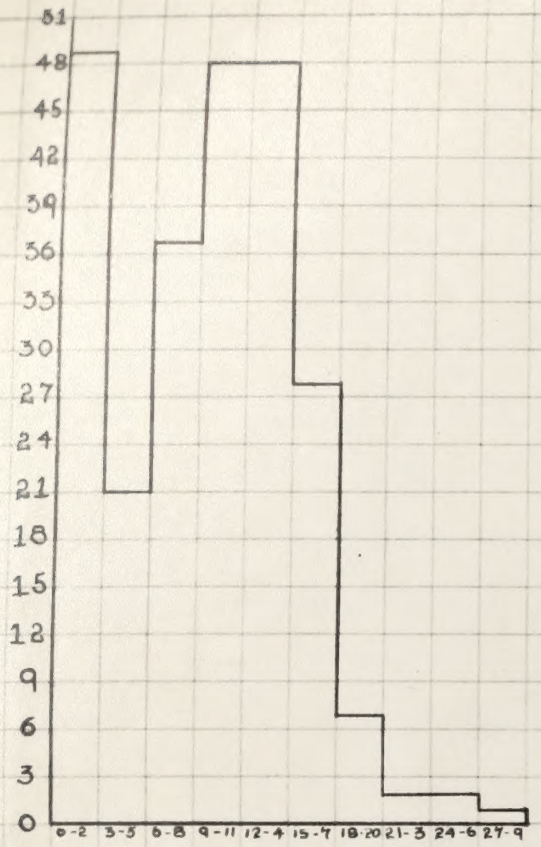


Figure 11. Totals of 243 Pupils

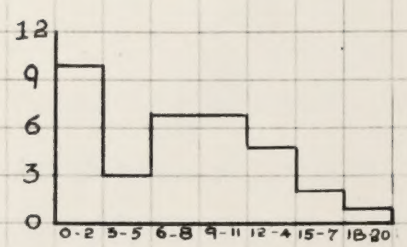


Figure 12. Experimental

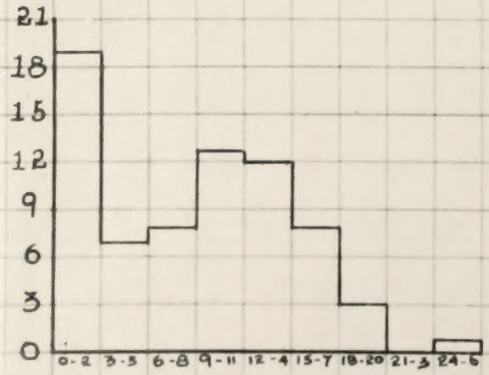


Figure 13. Control A

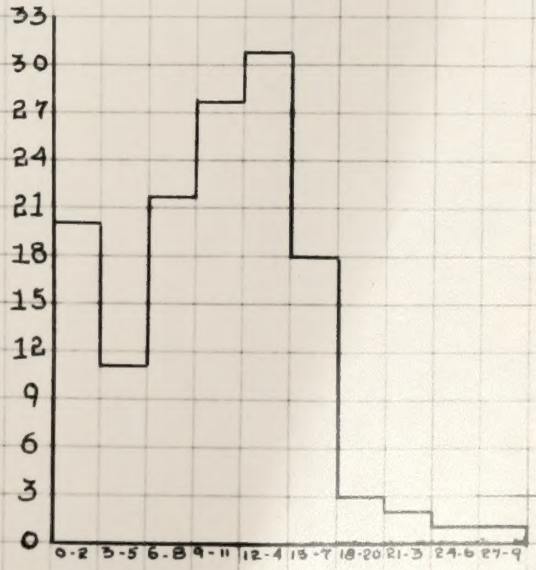


Figure 14. Control M

PRETEST
TOTALS
OF
ACTIVITY RESPONSES

on the part of many pupils to associate activities with social studies reading.

In Table V, Pretest Totals of Activity Responses, on preceding page, are also presented data from the responses made by the three groups separately. The mean for Experimental is 7.92 ± 5.16; 68 percent of the cases fall between 2.76 and 13.08. Figure 12 reveals a range of 0-20; concentration occurs in the interval 0-2.

The mean for Control A is 8.94 ± 5.37; 68 percent of the cases fall between 3.57 and 14.31. The histogram in Figure 13 shows a spread of 0-26; concentration occurs in the interval 0-2. Comparison with Experimental responses shows in the mean of Control A an increase of 1.02 points; in the standard deviation an increase of 0.21 points; and in the upper limit of the range an increase of 6.0 points. However, many responses occur in the interval 0-2 in both groups.

The mean for Control M is 10.32 ± 5.46; 68 percent of the cases fall between 4.86 and 15.78. Figure 14 reveals a range of 0-29; concentration here occurs

in the interval 14-17, producing a relatively normal distribution.

Comparison shows an increase of 1.38 in the mean for Control M over Control A; an increase of 2.40 over Experimental. An increase of 9 points also occurs in the upper limit of the range for Control M. Since the distribution of intelligence was so nearly similar for all three groups, differences in test results cannot be explained by this factor. The means and standard deviations for Experimental and Control A are similar. One explanation may be that these pupils were in the same school system, experiencing the same opportunities in developing power through expression activity. Some understanding of this type of associational reading is indicated by the concentration of responses in the interval 0-2. The higher mean for Control M may indicate that because these pupils experienced a different curriculum their responses showed greater familiarity with expression activity. The increase in the upper limit of the range also bears out this reasoning.

Analysis of Unacceptable Responses.-- Another measurement of ability to associate expression activities with social studies reading was the totaling of unacceptable responses. Table VI, Pretest Unacceptable Responses, gives the mean for the 243 pupils as 3.46 ± 4.70; 68 percent of the 243 cases fall between -1.24 and +8.16. The range of 0-25 shows concentration of unacceptable responses in the interval 0-2. Some pupils, however, gave as many as 25 unacceptable responses.

Table VI. Pretest Unacceptable Activity Responses

Group	No. Cases	Range	Mean	S.Dm.	S.Em.
Entire	243	0-25	3.46	4.70	0.30
Experimental	35	0-17	4.78	4.98	0.84
Control A	71	0-23	5.00	6.26	0.74
Control M	137	0-21	2.72	2.94	0.26

In Table VI are also presented data for the three groups separately. The mean for Experimental is 4.78 ± 4.98; the average number of responses was almost 5.00; 68 percent of the cases fall between -0.20 and +9.76. The range of 0-17 indicates that

Analysis of Unacceptable Responses.-- Another measurement of ability to associate expressed on activities with social studies reading was the totaling of unacceptable responses. Table VI, Pretest Unacceptable Responses, gives the mean for the 245 pupils as 5.45 ± 4.70; 68 percent of the 245 cases fall between -1.24 and +8.16. The range of 0-25 shows concentration of unacceptable responses in the interval 0-5. Some pupils, however, gave as many as 25 unacceptable responses.

Table VI. Pretest Unacceptable Activity Responses

Group	No. Cases	Range	Mean	S.Dm.	S.Dx.
Entire	245	0-25	5.45	4.70	0.30
Experimental	35	0-17	4.78	4.88	0.84
Control A	71	0-25	5.00	6.26	0.74
Control M	137	0-21	5.78	5.54	0.36

In Table VI are also presented data for the three groups separately. The mean for Experimental is 4.78 ± 4.88; the average number of responses was almost 5.00; 68 percent of the cases fall between -0.20 and +9.76. The range of 0-17 indicates that

some pupils made no acceptable responses while others gave as many as 17; concentration is in the interval 0-2.

The mean for Control A is 5.00 ± 6.26; 68 percent of the cases fall between -1.26 and +11.26. The range of 0-23 raised the upper limit 6 points above the upper limit for Experimental; concentration occurs in the interval 0-2.

The mean for Control M is 2.72 ± 2.94; 68 percent of the cases fall between -0.22 and +5.66. This mean is 2.06 points lower than the mean for Experimental and 2.28 lower than that of Control A. The range of 0-21, however, presents the same broad scope as that of the other two groups; concentration occurs in the interval 0-2.

Analysis of the data of these unacceptable responses shows a mean of 3.46 ± 4.70. Thus 68 percent of the 243 cases indicate inability to do associational reading. Despite the explanatory section on the sample page of the test booklet only 50 percent of Experimental, 60 percent of Control A, and 66 2/3 percent of Control M show perfect understanding of the term "expression activity."

From the foregoing discussion it may be noted that: (1) the mean for the total group is 9.54 ± 5.70; (2) Experimental has the lowest mean and range, Control A the next highest, and Control M the highest; (3) the standard deviation for all three groups indicates a centralization of response; and (4) the mean for unacceptable responses is 3.46 ± 4.70. While some familiarity with associating expression activities with social studies reading was evidenced, the data showed an unsatisfactory quantity of acceptable responses, and too many of the unacceptable.

Analysis of Qualitative Data.-- The second objective was to discover what kind of expression activities the seventh grader associates with his social studies reading. Acceptable responses were placed in three descriptive categories--Manipulative, Intellectual, and Creative. Chapter IV defines these terms, and tabulations in the Appendix, pages 106a-115a, give complete data. The Creative responses exceeded the other two types in number. Table VII, Comparison of Pretest Activity Responses according to Type,

shows the mean for Creative responses to be 3.98 ± 3.10; the mean for Intellectual responses 2.76 ± 2.48; and the mean for Manipulative responses 3.05 ± 2.36. The critical ratio between Creative and Intellectual is 4.69; that between Creative and Manipulative is 3.76. Thus it may be seen that the difference between Creative and each of the others is significant. The similarity in range, despite the difference in mean, is interesting to note.

Table VII. Pretest Activity Responses Organized According to Type

Type of Activity	No. Cases.	Range	Mean	S.Dm.	S.Em.
Creative	243	0-19	3.98	3.10	0.20
Intellectual	243	0-13	2.76	2.48	0.16
Creative	243	0-19	3.98	3.10	0.20
Manipulative	243	0-13	3.94	2.36	0.15

Type of Activity	Actual Diff. m	S.E. diff.	Critical Ratio
Creative Intellectual	1.22	0.26	4.69
Creative Manipulative	0.94	0.25	3.76

From these data it may be inferred that such activities as drawing and the telling or writing of stories are those most readily suggested to the seventh grader. The small number of purely Intellectual responses may be due partly to the fact that many of the Creative type involved the use of Intellectual activity as a means of producing Creative expression. Another explanation may be that such activities as reading or studying a machine in operation are not so popular with the seventh grader. Manipulative activity shows more attraction for the seventh grader than Intellectual, yet not so much as Creative.

Relationship between Intelligence and Number of Responses.-- A third objective was to discover the relationship between intelligence and the number of activities suggested. Table VIII, Correlation between Intelligence and Total Activity Responses in Pretest was constructed to show this relationship. The correlation coefficient of +.44 indicates some relationship to exist, but not a substantial amount. That is to say, a high intelligence quotient does not necessarily correlate with a large number of activity responses, yet it does imply the probability of some responses.

Table VIII. Correlation between Intelligence and Total Activity Responses in Pretest

I.Q. \ Score	0-2	3-5	6-8	9-11	12-14	15-17	18-20	21-3	24-6	27-9	Totals
130-4						1	1				2
125-9		1				1			1		3
120-4					4	1					5
115-9	1			3	3	3	1			1	12
110-4			4	5	1	2	2	1			15
105-9	3	2	3	7	7	3			1		26
100-4	8	4	8	10	12	8	2	1			53
95-9	7	6	10	11	8	4					46
90-4	9	4	5	5	10	3					36
85-9	9	2	3	3	2	2					21
80-4	10		3	3							16
75-9	1	2	2	1		1					7
70-4											0
65-9											0
60-4											0
55-9											1
Totals	49	21	38	48	47	29	6	2	2	1	243

Score		I.Q.	
Mean	9.51	Mean	99.45
S.D.	5.67	S.D.	11.20
S.Em.	0.36	S.Em.	0.72

r= +.44

Table IX. Pretest Activity Responses Organized According to Sex

Pretest	No. Cases	Mean	S.Dm.	S.Em.	Actual Diff.m	S.E. Diff.	Critical Ratio
Boys	133	11.25	5.82	0.51	1.95	0.74	2.64
Girls	110	9.30	5.55	0.53			

Table VIII. Correlation between Intelligence and Total Activity Response in Interest

Score I.Q.	0-2	3-5	6-8	9-11	12-14	15-17	18-20	21-23	24-26	27-29	Totals
130-4						1	1				2
125-9		1				1			1		3
120-4					4	1					5
115-9	1			3	3	3	1			1	12
110-4			4	6	1	3	2	1			18
105-9	3	2	3	7	7	3			1		26
100-4	3	4	8	10	12	8	2	1			52
95-9	7	8	10	11	8	4					44
90-4	9	4	3	5	10	3					34
85-9	9	2	3	3	2	2					21
80-4	10		3	3							16
75-9	1	3	2	1		1					7
70-4											0
65-9											0
60-4											0
55-9											1
Totals	42	31	38	48	47	29	6	2	2	1	248

Score I.Q.	
Mean	99.49
S.D.	13.20
S.Em.	0.72

r = .44

Table IX. Preteen Activity Responses Organized According to Sex

Preteens	No. Cases	Mean S.Dm.	S.Em.	Actual Diff.m	S.E. Diff.	Critical Ratio
Boys	138	11.85 5.82	0.51	1.93	0.74	2.64
Girls	110	9.80 5.55	0.55			

Relationship between Sex Differences and Number of Responses.-- A fourth objective was to find out the relationship between sex differences and the number of activities suggested. Table IX, Pretest Activity Responses Organized According to Sex, shows the mean for boys to be 11.25 ± 5.82; the mean for girls to be 9.30 ± 5.55. Thus 68 percent of the responses made by the boys fall between 5.43 and 17.07; 68 percent of those made by the girls fall between 3.75 and 14.85. From these data it may be inferred that boys conceive ideas for expression activities more readily than girls. Despite the difference in mean, the critical ratio of 2.64 is not significant.

(B) Questions for Further Research

Analysis of Acceptable Responses.-- In measuring this phase of associational reading, like the foregoing, there were several objectives. One was to measure how much the seventh grader finds suggestion for questioning in his social studies reading. To meet this objective it was necessary to total raw scores. Tabulations of these scores are in the Appendix, pages 106a - 115a,

Table X, Pretest Totals of Question Responses

Group	No. Cases	Range	Mean	S.Dm.	S.Em.
Entire	243	0-32	14.05	5.46	0.35
Experimental	35	3-26	14.70	5.19	0.88
Control A	71	0-32	14.82	6.12	0.73
Control M	137	0-29	14.52	5.46	0.47

Table X, Pretest Totals of Question Responses, gives the measures of central tendency and variability computed for the 243 cases. The mean of 14.05 ± 5.46 indicates that 68 percent of the cases have a score between 8.59 and 19.51. The histogram in Figure 15 shows a broad spread of 0-32; responses centralized so as to give a normal distribution.

Comparison with the mean of 9.54 ± 5.70 for activity responses and their range of 0-29 shows the pupils to be more adept at questioning than at conceiving expression activities.

In Table X, above, are also presented data from the responses made by the three groups separately. No two means are more than 0.30 apart, indicating the results to be almost identical. The three standard deviations also show the tendency of responses to centralize in a

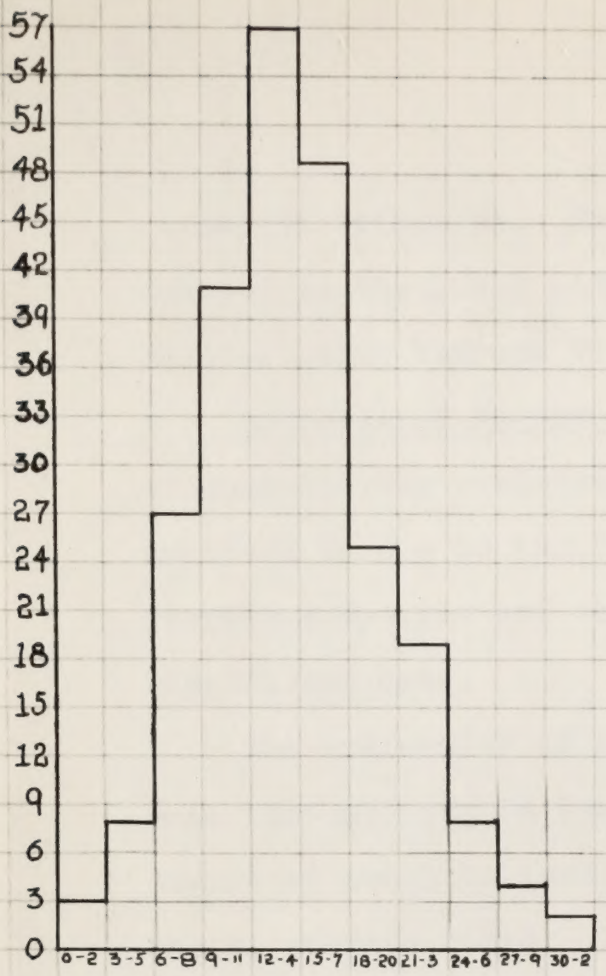


Figure 15. Total of 243 Pupils

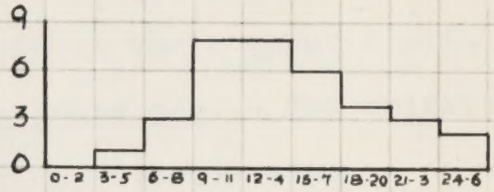


Figure 16. Experimental

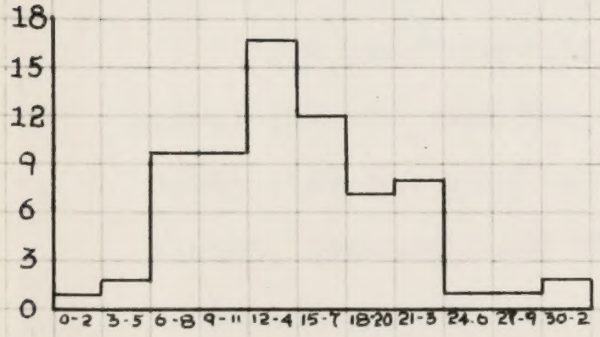


Figure 17. Control A

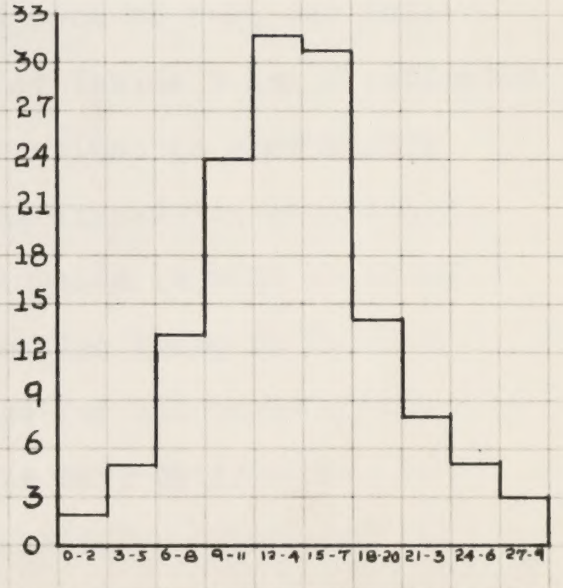


Figure 18. Control M

PRETEST

TOTALS OF QUESTION RESPONSES

normal distribution. Experimental alone does not reach 0 as the lower limit of its range; all groups reach a point between 26 and 32 as their upper limit.

Analysis of Unacceptable Responses.-- The omission of unacceptable responses and any accompanying analysis is due to the fact that the number of such responses was few and the resulting figures gave no significant data.

The uniformity of results may be inferred to mean that all pupils tested are developing the same degree of skill in questioning as they read in the social studies field. The presence of practically no unacceptable responses would seem to bear out this interpretation. Comparison of Tables V and X indicates that skill in associating questions is more highly developed than in associating expression activities.

From the foregoing discussion it will be noted that: (1) the mean for the entire group is 14.05 ± 5.46; (2) the mean and range for all three groups are almost identical; (3) the standard deviations for all three groups indicate normal distribution; and (4) unacceptable responses were almost nil. Associating

questions with social studies materials is no doubt a skill which is being developed in both schools.

Analysis of Qualitative Data.-- The second objective was to discover what kind of questions the seventh grader associates with social studies reading. Acceptable responses were placed in three descriptive categories--Clarifying, Immature, and Enriching. Chapter IV defines these terms, and tabulations in the Appendix, give complete data. Table XI, Pretest Question Responses Organized According to Type, shows measures of central tendency and variability for only the two types presenting the greatest contrast, namely, Enriching and Clarifying. The mean of the Enriching category is 5.88 - 3.90, and it excedes that of the Clarifying category by 1.23. The critical ratio, however, is only 2.93, and so the difference between the means is not significant.

Table XI. Pretest Question Responses Organized According to Type

Type	No. Cases	Range	Mean	S.Dm.	S.Em.	Actual Diff.	S.E. Diff.	Crit. Ratio
Enriching	243	5.88	3.90	3.90	0.26	1.23	0.42	2.93
Clarifying	243	4.65	5.10	5.10	0.33			

From these data it may be inferred that Enriching or thought-provoking questions which arise while reading are not significantly more numerous than questions which arise merely to help clarify the thought. That is to say, questions provoked by poor reading are almost as numerous as questions indicating mature mental functioning.

Relationship between Intelligence and Number of Responses.-- A third objective was to discover the relationship between intelligence and the number of questions raised. Table XII, Correlation between Intelligence and Total Question Responses in Pretest was constructed to show this relationship. The correlation coefficient of -.26 indicates that very little relationship exists. That is to say, a high intelligence quotient probably does not correlate with a large number of question responses.

Relationship between Sex Differences and Number of Responses.-- A fourth objective was to find the relationship between sex differences and the number of questions raised. Table XIII, Pretest Question Responses

Table XII. Correlation between Intelligence and Total Question Responses in Pretest

Score I.Q.	0-2	3-5	6-8	9-11	12-14	15-7	18-20	21-3	24-6	27-9	30-2	Totals
130-4											2	2
125-9			1						2			3
120-4				1	1	2				1		5
115-9				2	2	4	1	2		1		12
110-4			3	2	3	2	4	1				15
105-9		1	1	8	7	4	3	1	1			26
100-4	1	2	6	9	10	8	8	6	1	2		53
95-9			5	7	17	7	5	4	1			46
90-4			2	8	7	12	2	3	2			36
85-9		2	4	1	5	4	2	2	1			21
80-4		3	3	2	4	4						16
75-9	2		1	2	1	1						7
70-4												0
65-9												0
60-4												0
55-9						1						1
Totals	3	8	26	42	57	49	25	19	8	4	2	243

Score		I.Q.	
Mean	14.61	Mean	99.45
S.D.	5.61	S.Dm.	11.20
S. Em.	0.36	S.Em.	0.72

r= +.26

Table XIII. Pretest Question Responses Organized According to Sex.

Pretest	No. Cases	Mean	S.Dm.	S.Em.	Actual Diff.	S.E. m.Diff.	Critical Ratio
Boys	133	15.69	5.52	0.48	2.34	0.71	3.30
Girls	110	13.35	5.46	0.52			

Score	0-2	3-5	6-8	9-11	12-14	15-17	18-20	21-23	24-26	27-29	30-32	Totals
I.Q.												
130-4											2	2
125-9					1				2			3
120-4				1		2				1		5
115-9				2	2	4	1	3		1		13
110-4			3	2	3	2	4	1				15
105-9		1	1	8	7	4	5	1	1			28
100-4	1	2	6	9	10	8	8	6	1	2		53
95-9			5	7	17	7	5	4	1			46
90-4			2	8	7	12	2	3	3			36
85-9		2	4	1	5	4	2	1	1			21
80-4		3	3	2	4	4						16
75-9	2		1	2	1	1						7
70-4												0
65-9												0
60-4												0
55-9						1						1
Totals	3	8	25	42	57	49	25	19	8	4	2	243

I.Q.

Score

Mean 14.61 Mean 95.45

S.D. 5.81 S.Dm. 11.20 r= +.56

S. Em. 0.36 S.Dm. 0.72

Table XIII. Pretest Question Response Organized According to Sex.

Pretest No.	Cases	Mean	S.Dm.	S.Em.	Diff.m.	Diff. Ratio	Actual S.E.	Critical
Boys	133	15.69	5.52	0.49	2.34	0.71	3.30	
Girls	110	12.35	5.46	0.52				

Organized According to Sex, shows the mean for boys to be 15.69 ± 5.52, and the mean for girls to be 13.35 ± 5.46. Thus 68 percent of the responses made by the boys fall between 10.17 and 21.21; 68 percent of those made by the girls fall between 7.89 and 18.81. The critical ratio of 3.30 shows this difference to be significant. From these data it may be inferred that boys are slightly more ready than girls to raise questions as they read social studies materials.

It is difficult to summarize the two phases of Series I, namely, responses as shown by suggested activities and by raising questions. Nevertheless, this generalization may be permissible: (1) the total number of questions raised exceeds the total number of activities suggested; (2) thought-provoking questions are not significantly more numerous than those which merely clarify the story; (3) the relationship between intelligence and activities is somewhat significant; (4) the relationship between intelligence and the number of questions raised is not significant; and (5) the number of activity responses is not influenced by sex, the number of question responses is to a slight degree.

(C) Illustrating a Specific Idea

Analysis of Acceptable Responses.-- Series II was designed to measure in how far the seventh grader uses his experiential knowledge to illustrate specific ideas presented in his social studies reading. To determine how much he practices this type of associational reading it was necessary to total raw scores. Tabulations of these scores are in the Appendix, pages 116a-125a. Table XIV, Pretest Totals of Illustration-of-a-Specific-idea Responses, gives the measures of central tendency and variability computed for the 243 cases. The mean of 19.17 ± 8.34 indicates that 68 percent of the 243 cases have a score between 10.83 and 27.51. The histogram in Figure 19 shows a broad spread of 3-62; no cases fall in the interval 0-2; only six isolated cases are located above the interval 33-35.

Table XIV. Pretest Totals of Illustration-of-a-Specific Idea Responses

Group	No. Cases	Range	Mean	S.Dm.	S.Em.
Entire	243	3-62	19.17	8.34	0.53
Experimental	35	6-35	19.77	6.15	1.04
Control A	71	3-62	20.85	9.30	1.11
Control M	137	3-50	20.85	8.25	0.71

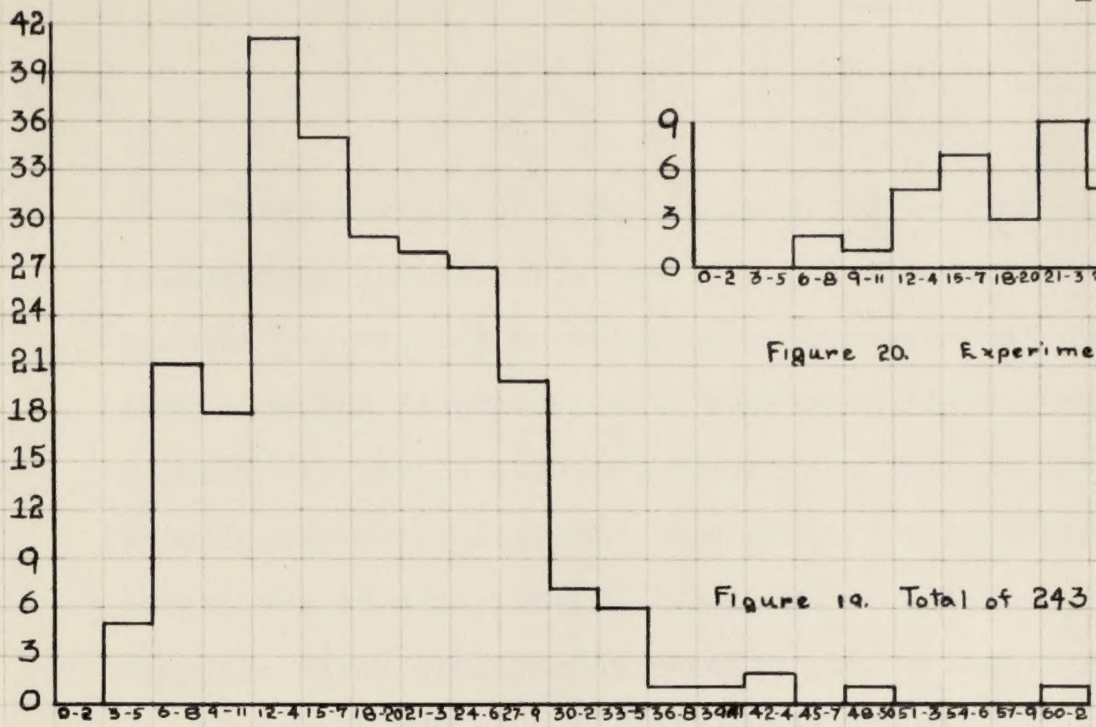


Figure 19. Total of 243 Pupils

Figure 20. Experimental

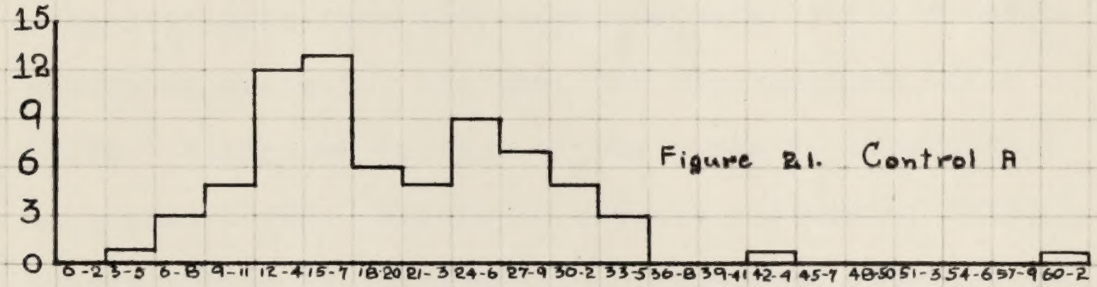


Figure 21. Control A

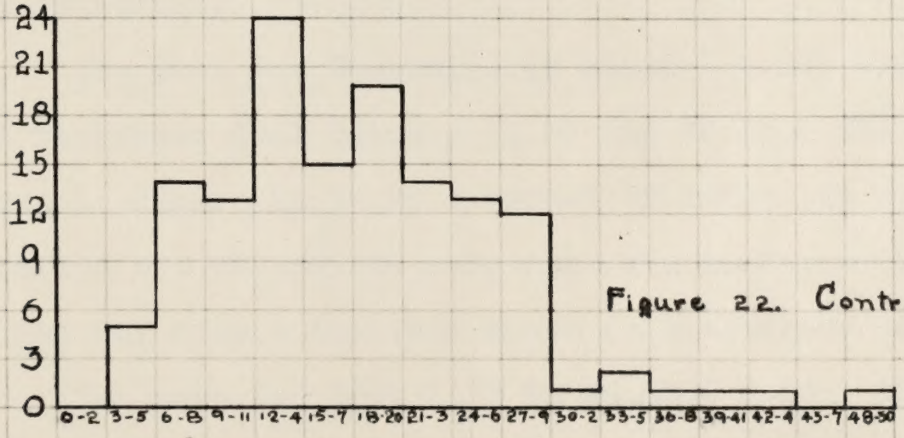


Figure 22. Control M

PRETEST

TOTALS

OF

ILLUSTRATION-OF-A-SPECIFIC-IDEA

RESPONSES

Total absence of cases in interval 0-2 may be inferred to indicate that every pupil understood how to make the type of association being measured. These data show the distribution of responses to be practically normal. It may be assumed, therefore, that in these schools the seventh grader is comparatively skillful in the use of experiential knowledge to illustrate specific ideas presented in social studies reading.

In Table XIV, on preceding page, are also presented data from the responses made by the three groups separately. The mean for Experimental is 19.77 ± 6.15; 68 percent of the cases fall between 13.62 and 25.92. Figure 20 reveals a range of 6-35; concentration at interval 21-23 shows the distribution to be normal.

The mean for Control A is 20.85 ± 9.30; 68 percent of the cases fall between 11.55 and 30.15. The histogram in Figure 21 shows a spread of 3-62; no concentration occurs and the responses are scattered between 3 and 35, with 2 isolated cases falling above 35.

The mean for Control M is 20.85 ± 8.25; 68 percent of the cases fall between 12.60 and 29.10. Figure 22

reveals a range of 3.50; the distribution of responses is normal.

Examination of the three groups shows the mean for Control A to be identical with that for Control M; means for both control groups are 1.08 above the mean for Experimental. The range of Control A and Control M has the same lower limit of 3, which is 3 points lower than Experimental. The upper limit of Control A and that of Control M is 15 and 37 points higher, respectively than the upper limit of 35 for Experimental. Despite this greater range, the mean and distribution for all groups are similar. This may be interpreted to imply that the seventh grader in these schools uses experiential knowledge to illustrate specific ideas as he reads social studies materials.

Analysis of Unacceptable Responses.-- The data of Table XV, Pretest Unacceptable Illustration-of-a-Specific-Idea Responses, show the presence of unacceptable responses. These figures give the mean for the 243 cases as 3.81 $\pm$ 5.94; 68 percent of the 243 cases fall between -2.13 and +9.75. The range of 0-80 may deceive, for examination shows only one case to fall above 26; all other cases are concentrated in the interval 0-2.

Table XV. Pretest Unacceptable Illustration-of-a-Specific Idea Responses

Group	No. Cases	Range	Mean	S.Dm.	S.Em.
Entire	243	0-80	3.81	5.94	0.38
Experimental	35	0-11	3.45	2.67	0.56
Control A	71	0-80	5.43	9.69	1.15
Control M	139	0-14	3.03	2.64	0.02

In Table XV are also presented data from the unacceptable responses made by the three groups separately. The mean for Experimental is 3.45 ± 2.67; 68 percent of the cases fall between 0.78 and 6.12. The range of 0-11 indicates a few pupils made as many as 11 unacceptable responses, but concentration in the interval 0-2 indicates the majority of pupils were able to make acceptable responses.

The mean for Control A is 5.43 ± 9.69; 68 percent of the cases fall between -4.26 and +15.12. In this distribution both the mean and standard deviation are greatly increased by an isolated case in the interval 78-80. The distribution of all other cases occurs between 2 and 26, with heavy concentration below 6.

The mean for Control M is 3.03 ± 2.64; 68 percent of the cases fall between 0.39 and 5.67. The range is

Table XV. Pretest Unacceptable Illustration-of-a-Specific Idea Responses

Group	No. Cases	Range	Mean	S.Dn.	S.Em.
Entire	243	0-80	3.81	5.94	0.38
Experimental	35	0-11	3.65	3.67	0.62
Control A	71	0-80	5.45	9.09	1.15
Control M	109	0-14	3.05	2.64	0.25

In Table XV are also presented data from the unacceptable responses made by the three groups separately. The mean for Experimental is 3.65 ± 3.67; 68 percent of the cases fall between 0.79 and 6.52. The range of 0-11 indicates a few pupils made as many as 11 unacceptable responses, but concentration in the interval 0-5 indicates the majority of pupils were able to make acceptable responses.

The mean for Control A is 5.45 ± 9.09; 68 percent of the cases fall between -4.26 and +15.16. In this distribution both the mean and standard deviation are greatly increased by an isolated case in the interval 75-80. The distribution of all other cases occurs between 2 and 26, with heavy concentration below 8.

The mean for Control M is 3.05 ± 2.64; 68 percent of the cases fall between 0.39 and 5.67. The range is

0-14; that is, no pupils made more than 14 unacceptable responses. Concentration in the interval 0-2 indicates that most pupils made acceptable responses.

Examination of data shows the mean for Experimental and Control M to be similar and distribution for both to be normal. The mean for Control A is raised by one case in the interval 78-80, and so isolates this group and prevents valid comparison with the others. However, it is fair to assume from the data that the seventh grader in these schools practices the use of experiential knowledge to illustrate specific ideas as he reads social studies materials.

From the foregoing discussion it may be noted; (1) the mean for the total group is 19.17 ± 8.34; (2) the means of the three separate groups are comparable; (3) some power in illustrating specific ideas was indicated by the concentration of unacceptable responses in the interval 0-2 and by the total absence of acceptable responses in the same interval.

Analysis of Qualitative Data.-- The second objective was to discover with what degree of skill the seventh

grader uses experiential knowledge to illustrate a specific idea presented in social studies reading. Acceptable responses were placed in four descriptive categories--Indefinite, Incompatible, General, and Specific. Chapter IV defines these terms, and tabulations in the Appendix, page 116a-125a, give complete data.

Examination of these data showed the Indefinite category to offer no significant findings and so this group is not analyzed. The results of the General and Specific categories offered a contrast. However, since Specific measured power to illustrate on a higher level than General the data of General was not included in the analysis. Therefore, the following discussion deals only with Incompatible and Specific.

Table XVI, Pretest Illustrations-of-a-Specific-Idea Responses of Specific Type, shows the mean for the 243 pupils to be 6.06 $\pm$ 1.73; 68 percent of the cases fall between 4.33 and 7.79. Experimental made a mean of 7.77 $\pm$ 4.08, 2.64 points higher than Control A and 1.92 points higher than Control M. The ranges of all three are comparable; in each group concentration occurs in the interval 3-5.

Table XVI. Pretest Illustration-of-a-Specific-Idea Responses of Specific Type.

Group	No. Cases	Range	Mean	S.Dm.	S.Em.
Entire	243	0-20	6.06	1.73	0.11
Experimental	35	0-17	7.77	4.08	0.69
Control A	71	0-17	5.13	3.63	0.43
Control M	137	0-20	5.85	5.79	0.49

The uniformity of this data may indicate that the seventh grader does learn incidentally to use experiential knowledge to illustrate specific ideas as he reads social studies materials.

Since Incompatible responses were made mainly in Exercise IV, it may be pertinent at this time to analyze these results. The selection to be read by the pupils first explained the concept "strategy" and then described three applications of its use in world history. The pupils were asked to give illustrations of "strategic planning" in several clearly defined situations. Many of the responses showed failure to understand the concept "strategy". These responses, classified as Incompatible, were tabulated separately.

Table XVII, Pretest Illustration-of-a-Specific-Idea Responses of Incompatible Type, gives data concerning these responses.

Table XVII. Pretest Illustration-of-a-Specific-Idea Responses of Incompatible Type.

Group	No. Cases	Range	Mean	S.Dm.	S.Em.
Entire	243	0-17	4.08	3.39	0.21
Experimental	35	0-11	3.30	2.61	0.44
Control A	71	0-17	4.53	3.30	0.39
Control M	137	0-17	4.05	3.60	0.31

The mean for the 243 cases is 4.08 ± 3.39; 69 percent of the 243 cases fall between 0.69 and 7.47. The mean for Experimental, pertinent to the conclusions to be reached by this analysis, is 3.30 ± 2.61. Experimental also shows the smallest range, 0-11, although the concentration occurs in the interval 0-2 as it does in both Control A and Control M.

Lowest scores in the Incompatible category indicate superior reading ability. Experimental, with its range of intelligence quotients from 80-114, made the lowest scores of all these groups. This leads to the inference that Experimental reaches highest in reading comprehension. Nevertheless, the concentration in the interval 0-2 throughout all three groups indicates that Exercise IV presented a reading problem for the "average" seventh grader.

Relationship between Intelligence and Number of Responses.-- A third objective was to discover the relationship between intelligence and the number of illustrations applied. Table XVIII, Correlation between Intelligence and Total Illustration-of-a-Specific-Idea Responses in Pretest, was constructed to show this relationship. The correlation coefficient of +0.27 indicates a negligible relationship. That is to say, a high intelligence level probably does not correlate with a large number of illustration responses.

Relationship between Sex Differences and Number of Responses.-- A fourth objective was to find out the relationship between sex differences and the number of illustrations applied. Table XIX, Pretest Illustration-of-a-Specific-Idea Responses Organized According to Sex, shows the mean for boys to be 20.16 ± 8.64; and the mean for girls to be 17.97 ± 7.98. Thus 68 percent of the responses made by the boys fall between 11.52 and 28.80; 68 percent of those made by the girls fall between 9.99 and 25.95. Despite the difference in mean, however, the critical ratio of 2.05 is not significant.

Table XVIII. Correlation between Intelligence and Total Illustration-of-a-Specific-Idea Responses

(I.)

Score I.Q.	0-2	3-5	6-8	9-11	12-4	15-1	18-20	21-3	24-6	27-9
130-4										
125-9						1			2	1
120-4						1	1	1	1	
115-9			1		1	3		1	2	1
110-4			1		5		3		2	1
105-9		1		2	5	2	3	3	3	3
100-4			2	4	8	7	7	10	9	3
95-9			5	5	12	9	2	6	3	3
90-4		1	4		4	6	10	3		2
85-9		2	4	2	1	3	1	3	4	4
80-4		1	2	1	5	3	2	1		
75-9			2	3					1	1
70-4										1
65-9										
60-4										
55-9				1						
Totals	0	5	21	18	41	35	29	28	27	20

(II.)

Score I.Q.	30-2	33-5	36-8	39-40	42-4	45-7	48-50	57-3	54-6	57-9	60-2	Totals*
130-4	1											2
125-9												3
120-4												5
115-9	1	1		1	1		1					12
110-4	1		1									15
105-9		2										26
100-4	2											53
95-9	1	1										46
90-4	1	2									1	36
85-9					1							21
80-4												16
75-9												7
70-4												0
65-9												0
60-4												0
55-9												1
Totals	7	6	1	1	2	0	1	0	0	0	1	243

*Totals in second table include figures in first table.
Table 2, a continuation of table 1. See page 142.

Table XIX. Pretest Illustration-of-a-Specific-Idea Responses Organized According to Sex

Pretest	No. Cases	Range	Mean	S.D.	S.Em.
Boys	133	3-62	20.16	8.64	0.75
Girls	110	3-44	17.97	7.98	0.76

Pretest	Actual Diff. m.	S.E. Diff.	Critical Ratio
Boys Girls	2.19	1.07	2.05

Note: In Table XVIII the following figures should be added:

Score		I.Q.		
Mean	19.17	Mean	99.45	
S.Dm.	8.34	S.Dm.	11.20	r = +.27
S.Em.	0.53	S.Em.	0.72	

From these data it may be inferred that although boys tend to use their experiential knowledge more than girls to illustrate specific social studies ideas, sex differences are not a significant factor.

From the foregoing discussion it may be noted that: (1) the mean of total responses is a satisfactory quantity; (2) no acceptable responses occur below 3; (3) the superior type of illustration is most prevalent; (4) Exercise IV presented a reading comprehension problem; (5) the relationship between intelligence and the number of illustrations given is not significant; and (6) the relationship between sex differences and illustrations is not significant.

(D) Illustrating a Generalization

Analysis of Acceptable Responses.-- Series III was designed to measure in how far the seventh grader uses his experiential knowledge to illustrate generalizations presented in his social studies reading. To determine how much he practices this type of associational reading, it was necessary to total raw scores. Tabulations

of these scores are in the Appendix, pages 126a - 135a. Table XX, Pretest Totals of Illustration-of-a-Generalization Responses, gives the measures of central tendency and variability computed for the 243 cases. The mean of 6.81 ± 4.86 indicates that 68 percent of the 243 cases have a score between 1.95 and 11.67. The histogram in Figure 23 shows a medium spread of 0-2; cases are about equally distributed among the three lowest intervals.

Table XX. Pretest Totals of Illustration-of-a-Generalization Responses.

Group	No. Cases	Range	Mean	S.Dm.	S.Em.
Entire	243	0-26	6.81	4.86	0.31
Experimental	35	0-17	7.17	3.78	0.64
Control A	71	0-26	7.74	5.58	0.66
Control M	137	0-26	6.27	4.74	0.41

It may be pertinent to compare the above data with the Pretest totals for illustrating a specific idea. Table XXI (next page) shows the critical ratio of 19.94 to be highly significant. It is quite possible that the lower mean in Series III indicates failure to use extensively experiential knowledge in illustrating generalizations.

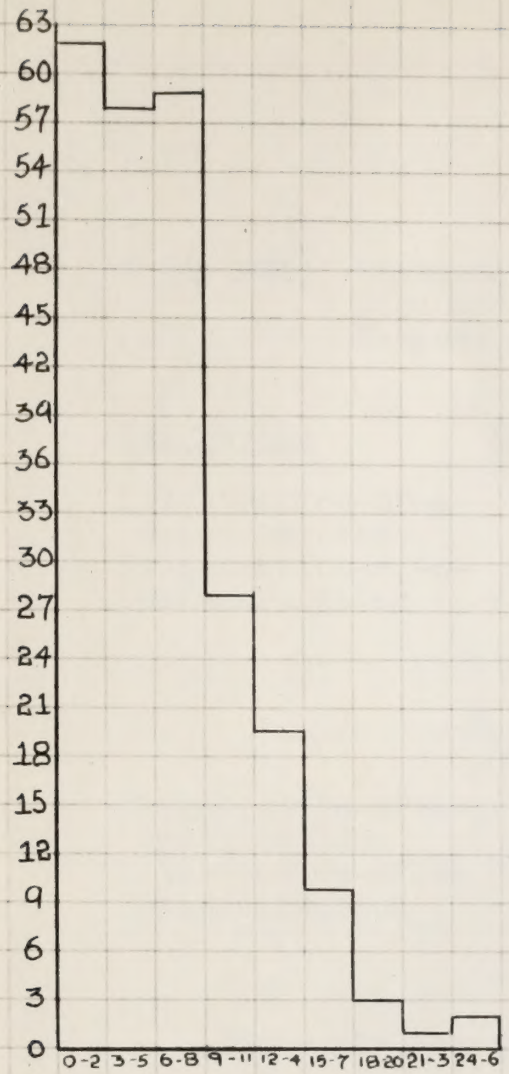


Figure 23. Totals of 243 Pupils

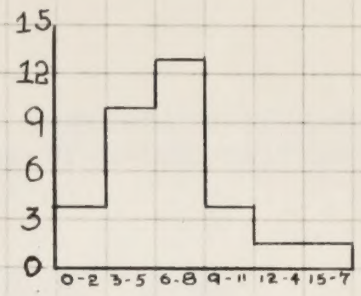


Figure 24. Experimental

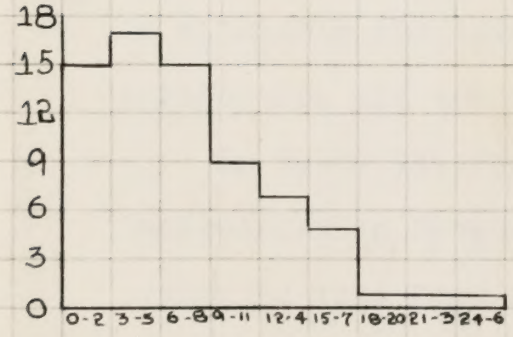


Figure 25. Control A

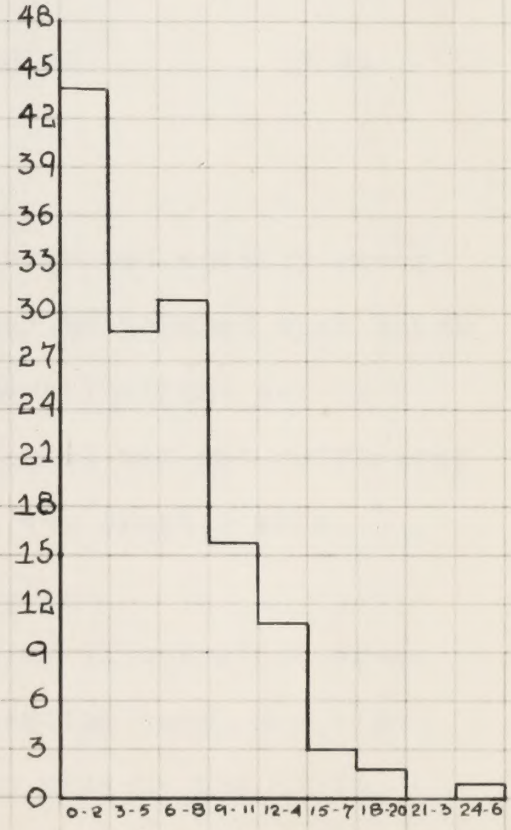


Figure 26. Control M

PRETEST
TOTALS
OF
ILLUSTRATION-OF-A-GENERALIZATION
RESPONSES

Table XXI. Pretest Totals of Illustration-of-a-Specific Idea and Illustration-of-a-Generalization Responses

243 Pupils	Range	Mean	S.Dm	S.Em.
Illustration-of-a-Specific Idea	3-62	19.17	8.34	0.53
Illustration-of-a-Generalization	0-26	6.87	4.86	0.31

	Actual Diff. m.	S.E. Diff.	Critical Ratio
Illustration-of-a-Specific Idea / Illustration-of-a-Generalization	12.36	0.62	19.94

Since the responses are distributed equally among the three lowest intervals, it may be assumed that there is some understanding of how generalizations can be illustrated. Yet the power evidenced was not sufficient to eliminate the interval 0-2 in the chart; this elimination did occur in Series II.

In Table XX, Pretest Totals of Illustration-of-a-Generalization Responses, on preceding page, are also presented data from the responses made by the three grades separately. The mean for Experimental is

7.17 ± 3.78; 68 percent of the cases fall between 3.39 and 10.95. Figure 24 reveals a range of 0-17; this is a normal distribution.

The mean for Control A is 7.74 ± 5.58; 68 percent of the cases fall between 2.16 and 13.32. The histogram in Figure 25 shows a spread of 0-26; concentration is in the lower intervals.

The mean for Control M is 6.27 ± 4.74; 68 percent of the cases fall between 1.53 and 11.01. Figure 26 reveals a range of 0-26; and again concentration is in the lower intervals.

Examination of the three groups shows Control A to have the highest mean, and Control M the lowest. However, all lie within 1.47 points of each other. The range of all three groups has the same lower limit, namely 0. The upper limit varies; Experimental is only 17 as against the 26 of the other two groups. However, the mean is the more significant measure and so it may be inferred that the seventh grader in all three systems has much the same ability in using experiential knowledge to illustrate generalizations presented in social studies materials. Presence of many cases in the interval 0-2

may indicate that some seventh graders make no use of this type of associational reading.

Analysis of Unacceptable Responses.-- The data of Table XXII, Pretest Unacceptable Illustration-of-a-Generalization Responses, show the presence of unacceptable responses. These figures give the mean for the 243 cases as 5.67 ± 8.67; 69 percent of the 243 cases fall between -3.00 and +14.34. The range of 0-26 is medium, and concentration occurs in the 0-2 interval.

Table XXII. Pretest Unacceptable Illustration-of-a-Generalization Responses.

Group	No. Cases	Range	Mean	S.Dm.	S.Em.
Entire	243	0-26	5.67	8.67	0.56
Experimental	35	0-20	5.19	4.71	0.80
Control A	71	0-26	7.50	5.88	0.70
Control M	137	0-26	4.86	4.35	0.37

In Table XXII, above, are also presented data from the three groups separately. The mean for Experimental is 5.19 ± 4.71; 68 percent of the cases fall between .48 and 9.90. The range of 0-20 is medium; concentration occurs below 6.

The mean for Control A is 7.50 ± 5.88; 68 percent of the cases fall between 1.62 and 13.38. The range of

0-26 is medium; concentration occurs in the lower intervals.

The mean for Control M is 4.86 ± 4.35; 68 percent of the cases fall between 0.51 and 9.21. Here again the range of 0-26 is medium, and concentration occurs in the two lower intervals.

Examination of data shows the mean for Control A to be 2.64 points above Control M and Experimental to be between them. The range, 0-26, for Control A and Control M is identical; the upper limit of the range for Experimental is only 20. In all three groups many cases fall below 6. This indicates few unacceptable responses for the majority of pupils. However, the limited number of acceptable responses and large number of unacceptable responses indicates inefficient use of this associational reading skill.

From the foregoing discussion it may be noted that: (1) the mean for the 243 cases is 6.81 ± 4.86; (2) the means of the three separate groups fall within 1.47 points of each other; (3) comparison with Series II shows that the seventh grader has far less ability in illustrating social studies generalizations than in

illustrating specific ideas.

Analysis of Qualitative Data.-- The second objective was to discover with what degree of skill the seventh grader uses experiential knowledge to illustrate generalizations presented in social studies reading. Acceptable responses were placed in five descriptive categories Indefinite, Incompatible, Inadequate, General, and Specific. Chapter IV defines these terms, and tabulations in the Appendix pages 126a-135a, give complete data.

Examination of these data showed that the Indefinite, Incompatible categories offered no significant findings and so these groups are not analyzed. Inadequate responses occurred only in Exercise VIII and were evidently the result of these seventh graders inability to illustrate the two-fold generalization presented. The results of General and Specific categories showed reverse contrast to results in Series II; that is, Specific measured power to illustrate on a higher level than General, the data for Specific seemed more significant to analyze. Therefore, the following discussion deals only with Specific responses.

illustrating specific ideas.

Analysis of Qualitative Data.-- The second objective was to discover with what degree of skill the seventh grader uses experiential knowledge to illustrate generalizations presented in social studies reading. Acceptable responses were placed in five descriptive categories Inarticulate, Incompatible, Inadequate, General, and Specific. Chapter IV defines these terms, and tabulations in the Appendix page [illegible], give complete data.

Examination of these data showed that the Inarticulate, Incompatible categories offered no significant findings and so these groups are not analyzed. Inadequate responses occurred only in Exercise VIII and were evidently the result of these seventh graders inability to illustrate the two-fold generalization presented. The results of General and Specific categories showed reverse contrast to results in Series II; that is, Specific measured power to illustrate on a higher level than General, the data for Specific seemed more significant to analyze. Therefore, the following discussion deals only with Specific responses.

Table XXIII, Specific Illustration-of-a-Generalization Responses, shows the mean for the 243 cases to be 1.65 ± 0.72; 68 percent of the 243 cases fall between 0.93 and 2.37. Experimental made the highest mean, 1.68 ± 0.72. The ranges of the three are comparable, with no pupil giving more than 8 Specific illustrations.

Table XXIII. Pretest Illustration-of-a-Generalization Responses of Specific Type

Group	No. Cases	Range	Mean	S.Dm.	S.Em.
Entire	243	0-8	1.65	0.72	0.05
Experimental	35	0-5	1.68	0.72	0.12
Control A	71	0-5	1.62	0.60	0.07
Control M	137	0-8	1.65	0.78	0.07

Relationship between Intelligence and Number of Responses.-- A third objective was to discover the relationship between intelligence and the number of illustrations applied. Table XXIV, Correlation between Intelligence and Illustration-of-a-Generalization Responses, was constructed to show this relationship. The correlation coefficient of +.30 indicated it to be negligible. That is to say, a high intelligence level probably does not correlate with a large number of

illustration responses.

Relationship between Sex Differences and Number of Responses.-- A fourth objective was to find out the relationship between sex differences and the number of illustrations applied. Table XXV, Pretest Illustration-of-a-Generalization Responses, shows the mean for boys to be 6.99 ± 5.19; and the mean for girls to be 6.57 ± 4.41. Thus 69 percent of the responses made by boys fall between 1.80 and 12.18; 68 percent of those made by the girls fall between 2.16 and 10.98. The means are nearly identical; the ranges are also similar; and the resulting critical ratio of 0.68 is not significant.

From the data it may be inferred that sex does not affect power to use experiential knowledge in illustrating generalizations presented in social studies materials.

From the foregoing discussion it may be noted that: (1) the mean of total responses is very small; (2) unacceptable responses are relatively equivalent to the acceptable; (3) responses in this series are significantly fewer than in illustration of a specific idea; (4) the

Table XXIV. Correlation between Intelligence and Illustration-of-Generalization Responses

	0-2	3-5	6-8	9-11	12-4	15-7	18-20	21-3	24-6	Totals
130-4							1	1		2
125-9	2				1					3
120-4		1	1	1	1		1			5
115-9		1	3	3	3	1			1	12
110-4	3	3	3	5			1			15
105-9	6	6	6	4	2	2				26
100-4	8	15	16	7	5	2				53
95-9	18	12	7	3	3	3				46
90-4	5	13	13	2	1	1			1	36
85-9	9	3	4	2	2	1				21
80-4	8	2	4		2					16
75-9	2	2	2	1						7
70-4										0
65-9										0
60-4										0
55-9	1									1
Totals	62	58	59	28	20	10	3	1	2	243

Score		I.Q.		
Mean	6.81	Mean	99.45	
S.Dm.	4.86	S.Dm.	11.20	r = +.30
S.Em.	0.31	S.Em.	0.72	

Superior type of illustration appears very infrequently; (5) the relationship between intelligence and the number of illustrations given is not significant; and (6) the relationship between sex differences and illustrating a generalization is not significant.

Table XXV. Pretest Illustrations-of-a-Generalization Responses Organized According to Sex

Pretest	No. Cases.	Range	Mean	S.D.	S.Em.
Boys	133	0-26	6.99	5.19	0.45
Girls	110	0-26	6.57	4.41	0.42

Pretest	Actual Diff. M.	S. E. Diff.	Critical Ratio
Boys Girls	0.42	0.62	0.68

Summary

The purpose of this investigation was to discover in how far reading in the social studies field stimulates free associational thinking by the seventh grader. Associational reading was broken down into three phases--(1) stimulation to both self-expression through activity and questioning for further research; (2) use of experiential knowledge to illustrate a specific idea; and (3) use of experiential knowledge to illustrate a generalization. Since no available test satisfied the criteria an original one was built.

This test was administered to 243 seventh grade pupils in two school systems. Every observable indication pointed to the fact that the teaching methods in use were comparable. Both groups were representative of a wide range of socio-economic background; and both were normal in distribution of intelligence and chronological age.

From the results of the initial testing the following inferences may be made:

(A) Suggestions for Activities

(1) Small number of total responses.

Many pupils failed to associate activities satisfactorily with social studies reading. This may indicate that (1) this phase of associational reading has been neglected, or (2) the seventh grader is not mentally ready to associate activities with social studies reading.

(2) Large number of Creative activities.

A significant number of Creative activities was given. This may indicate: (a) that the seventh grader prefers this type; (b) that by nature he conceived this type more readily; or (c) that other types have been neglected in school training.

(3) Some relationship between intelligence and number of responses.

Little active influence seems to be exerted by intelligence upon the number of responses. This may presume the possibility of teaching this phase of associational reading to all pupils with some degree of success.

(4) Slight relationship between sex differences and number of responses.

Boys made more responses than girls, but not in significant number. This may indicate that sex is not a factor demanding consideration in teaching this reading skill.

(B) Questions for Further Research

(1) Satisfactory number of total responses.

Most pupils readily associated questions with social studies reading. This may indicate that this reading skill is already being taught.

(2) Equable distribution of types of questions.

Enriching questions occurred in greatest number, but not in significant majority. This may indicate that despite the satisfactory number of question responses, development of thought-provoking questions has been neglected.

(3) Little relationship between intelligence and number of responses.

No active influence seems to be exerted by intelligence upon the number of responses. This may presume the possibility of teaching this phase of associational reading to all pupils with some degree of success.

(4) Slight relationship between sex differences and number of responses.

Boys made a significant majority of responses compared with girls. This may indicate that boys are more ready than girls to raise questions as they read in the social studies field, thus making sex a factor of some import in teaching this reading skill.

(C) Illustrating of a Specific Idea

(1) Satisfactory number of total responses.

Most pupils readily illustrated specific ideas from experiential knowledge while reading social studies materials. This may indicate that this reading skill is being taught.

(2) Prevalence of Superior type of response.

Pupils were generally able to illustrate specific ideas in superior manner. This

may indicate that the seventh grader is developing power to do this phase of associational reading.

(3) Reading problem in Exercise IV.

Pupils were generally unable to illustrate the concept of "use of strategy" requested in Exercise IV. This may indicate (1) poor reading comprehension or (2) general inability of the seventh grader to illustrate abstract ideas.

(4) Little relationship between intelligence number of responses.

No active influence seems to be exacted by intelligence upon the number of responses. This may presume the possibility of teaching this phase of associational reading or all pupils with some degree of success.

(5) Some relationship between sex differences and numbers of responses.

Superiority of the boys' mean over that of the girls was significant. This may indicate that the seventh grade boy is more ready than the girl to learn this reading skill.

(D) Illustrating a Generalization

(1) Small number of total responses.

Most pupils failed to use experiential knowledge in satisfactory illustrations of the generalizations given. This may indicate that: (1) this phase of associational reading has been neglected, or (2) the seventh grader is not mentally able to analyze a generalization and apply an illustration.

(2) Little significance for any type of response.

All types of response were too few in number to present any significant data. The Superior type appeared far less frequently than in illustrator-of-a-specific idea series. This may indicate that the seventh grader either is not being taught or cannot learn the one, whereas he is being taught or can learn the other.

(3) Comprehension problem in Exercise VIII.

Pupils failed to illustrate adequately the two-fold generalization in Exercise VIII. This may indicate (1) poor reading comprehension or (2) general inability of the seventh grader to illustrate abstract ideas.

(4) Little relationship between intelligence and number of responses.

No active influence seems to be exacted by intelligence upon the number of responses. This may presume the possibility of teaching this phase of associational reading to all pupils with some degree of increase.

(5) No relationship between sex differences and number of responses.

Boys and girls made almost identical means. This may indicate that sex is not a factor demanding consideration in teaching this reading skill.

CHAPTER VI

EVALUATION OF TEACHING-LEARNING CYCLE

Introduction

The initial purpose of this investigation was to determine how much and what kind of associational thinking is practiced by the seventh grader while reading in the social studies field. An original test was built and administered in an effort to meet this two-fold objective. The resulting data, discussed in Chapter V, definitely points to the fact that curriculum builders have too long neglected the need for training in associational reading. The question arose, "Could a teaching-learning cycle be organized which would develop this skill?" To answer this question materials were prepared. These are explained and their use outlined in Chapter III. At the close of the teaching-learning cycle the original test was re-administered. It is the data of the retest which is presented in this chapter.

Comparison of Pretest and Retest Data for Experimental and Control A Groups

CHAPTER VI

EVALUATION OF TEACHING-LEARNING UNITS

Introduction

The initial purpose of this investigation was to determine how much and what kind of associational thinking is practiced by the seventh grader while reading in the social studies field. An original test was built and administered in an effort to meet this two-fold objective. The resulting data, discussed in Chapter V, definitely points to the fact that curriculum builders have too long neglected the need for training in associational reading. The question arose, "Could a teaching-learning cycle be organized which would develop this skill?" To answer this question materials were prepared. These are explained and their use outlined in Chapter III. At the close of the teaching-learning cycle the original test was re-administered. It is the data of the retest which is presented in this chapter.

Comparison of Pretest and Retest Data for Experimental and Control A Groups

It will be recalled that Series I was designed to measure in how far the seventh grader uses social studies reading as a stimulus for activity. Examination shows this reaction to have two aspects--expression through activity and questioning for further research. For clarity the two will be discussed separately.

(A) Suggestions for Activities

Comparison of Acceptable Responses.-- One purpose of the retest was to measure the quantitative changes in activities suggested. Table XXVI compares the total activity responses of both pretest and retest for Experimental. The pretest mean is 7.92 ± 5.16; the retest mean 21.86 ± 5.52. The critical ratio is 10.89, an increase highly significant. Table XXVII shows the pretest mean of Control A to be 8.54 ± 5.37; the retest mean 11.70 ± 8.20.

Table XXVIII compares gain for Experimental with that for Control A. An increase of 13.94 points was made by Experimental, one of 3.16 by Control A. The critical ratio of 6.23 shows this difference in gain to be significant. This gain for Experimental may be attributed to the effectiveness of the teaching-learning cycle.

Table XXVI. Pretest and Retest Total Activity Responses for Experimental

Experimental	No Cases	Mean	S.Dm.	S.Em.	Actual Diff.m	S.E. Diff.	Crit. Ratio
Pretest	35	7.92	5.16	0.87	13.94	1.28	10.89
Retest	35	21.86	5.52	0.93			

Table XXVII. Pretest and Retest Total Activity Responses for Control A

Control A	No. Cases	Mean	S.Dm.	S.Em.	Actual Diff.m	S.E. Diff.	Crit. Ratio
Pretest	71	8.54	5.37	0.64	3.16	1.16	2.72
Retest	71	11.70	8.20	0.97			

Table XXVIII. Difference in Gain in Total Activity Responses for Experimental and Control A

Group	No. Cases	Actual Gain	S.E. Gain	Diff. in Gain	S.E. Diff.	Critical Ratio
Experimental	35	13.94	1.28	10.78	1.73	6.23
Control A	71	3.16	1.16			

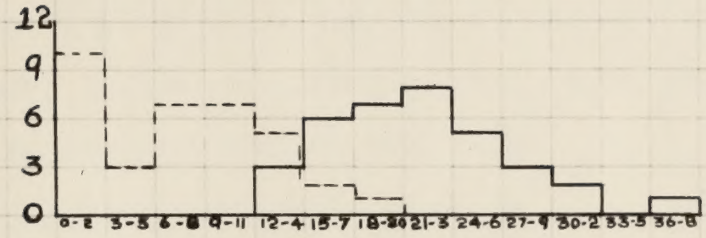


Figure 27. Experimental

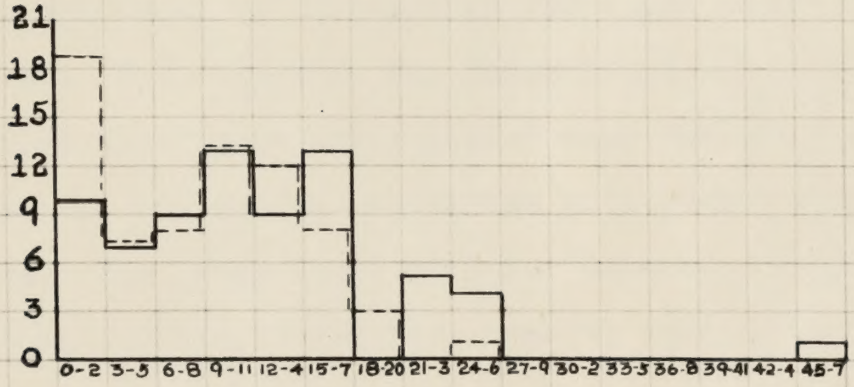


Figure 28. Control A

PRETEST AND RETEST

TOTALS

ACTIVITY RESPONSES

The critical ratio of Control A is 2.72, an increase not significant.

Figure 27 shows Experimental to make a normal distribution; Figure 28 shows Control A to make a distribution still skewed to the left.

The range as well as the mean of these groups shows significance. The retest range of Experimental (Figure 27) shows an increase in the lower limit from 0 to 12; in the upper limit from 20 to 37. The retest range of Control A (Figure 28) retains 0 as the lower limit, and shows an increase in the upper limit from 20 to 47. The change in the lower limit of Experimental signifies that every pupil gained some facility in associating expression activities with social studies reading. The lower limit of 0 for Control A indicates some pupils are unable to use thie reading skill with understanding.

From this data it may be inferred (1) that the directed teaching given Experimental was for them effective, and (2) that the slight gain for Control A was due to chance.

The critical ratio of Control A is 2.73, an increase not significant.

Figure 27 shows Experimental to make a normal distribution; Figure 28 shows Control A to make a distribution still skewed to the left.

The range as well as the mean of these groups shows significance. The poorer range of Experimental (Figure 27) shows an increase in the lower limit from 0 to 12; in the upper limit from 80 to 87. The poorest range of Control A (Figure 28) retains 0 as the lower limit, and shows an increase in the upper limit from 80 to 87. The change in the lower limit of Experimental signifies that every pupil gained some facility in associating expression activities with social studies reading. The lower limit of 0 for Control A indicates some pupils are unable to use this reading skill with understanding.

From this data it may be inferred (1) that the directed teaching given Experimental was for them effective, and (2) that the slight gain for Control A was due to chance.

Comparison of Unacceptable Responses.-- The data of the next three tables show the presence of unacceptable responses. Table XXIX shows pretest mean for Experimental to be 4.78 ± 4.98; the pretest mean 1.18 ± 0.56. The critical ratio of 4.24 is significant. Table XXX shows the pretest mean for Control A to be 5.00 ± 6.26; the pretest mean 3.02 ± 3.60. The critical ratio of 2.30 is not significant.

Table XXIX. Pretest and Retest Unacceptable Activity Responses for Experimental

Experimental	No. Cases	Mean	S.D.m	S.E.m	Actual Diff.m	S.E. Diff.	Crit. Ratio
Pretest	35	4.78	4.98	0.84	3.60	0.85	4.24
Retest	35	1.18	0.56	0.10			

Table XXX. Pretest and Retest Unacceptable Activity Responses for Control A

Control A	No. Cases	Mean	S.Dm.	S.Em.	Actual Diff. m	S.E. Diff.	Crit. Ratio
Pretest	71	5.00	6.26	0.74	1.98	0.86	2.30
Retest	71	3.02	3.60	0.43			

Table XXXI. Difference in Loss in Unacceptable Activity Responses for Experimental and Control A

Group	No. Cases	Actual Loss	S.E. Loss	Diff. in Loss	S.E. Diff.	Critical Ratio
Experimental	35	3.60	0.85	1.86	1.46	1.34
Control A	71	1.98	0.86			

Table XXXI, above, compares loss for Experimental with that for Control A. A decrease of 3.60 points was made by Experimental, and one of 1.98 by Control A. The critical ratio of 1.34 indicates the chances to be 68 in 100 that the difference is too great to be the result of sampling fluctuations. This loss for Experimental may be attributed to the effectiveness of the teaching-learning cycle.

Comparison of Qualitative Data.-- The Second objective was to measure the qualitative changes in activities suggested. Only the data concerning the Creative category are given since this field of responses seemed most significant.

Table XXXII shows the pretest mean for Experimental to be 3.18 ± 2.50; the retest mean 12.94 ± 5.48. The critical ratio, 9.57, is significant. Table XXXIII

shows the pretest mean for Control A to be 3.20 ± 2.48; the retest mean 4.38 ± 3.56. The critical ratio of 2.31 is not significant.

In Table XXXIV, the gain for Experimental is compared with that for Control A. An increase of 9.76 points was made by Experimental and one of 1.18 by Control A. The critical ratio of 7.53 shows this difference to be significant. This gain for Experimental may be attributed to the effectiveness of the teaching-learning cycle.

The range for Experimental shows an increase in its lower limit from 0 to 3; that for Control A remained at 0. This evidences the fact that every pupil in Experimental had learned to associate the Creative activity as he reads in the social studies. Both groups show increase in the upper limit of their range, but that of Experimental is 12 points higher. This also evidences that for these pupils, the teaching-learning cycle was effective.

The Appendix, pages 1060-1154 gives all data concerning the three categories of this section. The findings for the Intellectual and Manipulative activities are

disappointing. Lack of increase in power may be attributed to several factors--(1) these types of responses were not stressed enough during the teaching-learning cycle; (2) the seventh grader is not so much attracted by these types; (3) earlier school training emphasized these types and therefore they lack the"appeal of newness," or (4) these types may be less familiar.

Table XXXII. Pretest and Retest Creative Activity Responses for Experimental

Experimental	No. Cases	Range	Mean	S.Dm.	S.Em.
Pretest	35	0-9	3.18	2.50	0.42
Retest	35	3-29	12.94	5.48	0.93

	Actual Diff. m	S.E. Diff.	Critical Ratio
Pretest Retest	9.76	1.02	9.57

Table XXXIII. Pretest and Retest Creative Activity Responses for Control A

Control A	No. Cases	Mean	S.Dm.	S.Em.	Actual Diff.m	S.E. Diff.	Crit. Ratio
Pretest	71	3.20	2.48	0.29	1.18	0.51	2.31
Retest	71	4.38	3.56	0.42			

	Range
Pretest	0-11
Retest	0-17

Table XXXIV. Difference in Gains in Creative Activity Responses for Experimental and Control A

Group	No. Cases	Actual Gain	S.E. Gain	Diff. in Gain	S.E. Diff.	Crit. Ratio
Experimental	35	9.76	1.02	8.58	1.14	7.53
Control A	71	1.18	0.51			

Comparison of Intelligence.-- A third objective was to measure relationship of intelligence to quantitative changes in activities suggested. Data in the Appendix give the exact statistical relationship for individual cases. However, the data concerned with pretest figures presented in Chapter V state that no significant findings were procured in computing the correlation between intelligence and total responses. Garrett[1] says that "there is fairly good agreement that an

r from .00 to .20 denotes indifferent or negligible relationship;
r from .20 to .40 denotes low correlation; present but slight;
r from .40 to .70 denotes substantial or marked relationship;
r from .70 to 1.00 denotes high to very high relation."

Since no correlation computed with the pretest data gave an r greater than +.44 it may be inferred that intelligence has not been too active a factor in producing

1/ Henry E. Garrett, Statistics in Psychology and Education, Longmans, Green and Co., New York, 1939, p. 342.

the gains made by pupils who experienced the teaching-learning cycle.

Comparison of Sex Differences.-- A fourth objective was to measure the relationship between sex differences and quantitative change in activities suggested. Table XXXV gives pretest activity responses for Experimental and Control A organized according to sex.

Table XXXV. Pretest Activity Responses for Experimental and Control A Organized According to Sex

	Pretest	No. Cases	Mean	S.Dm.	S.Em.	Actual Diff.m	S.E. Diff.	Crit. Ratio
Exp.	Boys	23	8.55	4.83	1.01	2.04	1.69	1.21
	Girls	12	6.51	4.77	1.36			
Cont. A	Boys	35	8.37	6.75	1.14	1.14	1.42	0.80
	Girls	36	9.51	5.10	0.85			

Table XXXVI. Retest Activity Responses for Experimental and Control A Organized According to Sex

	Retest	No.Cases	Mean	S.Dm.	S.Em.	Actual Diff.m	S.E. Diff.	Crit. Ratio
Exp.	Boys	23	22.40	5.44	1.13	1.56	1.94	0.80
	Girls	12	20.84	5.50	1.58			
Cont. A	Boys	35	11.10	7.47	1.27	1.65	1.87	0.88
	Girls	36	12.75	8.25	1.38			

The pretest mean for boys of Experimental is 8.55 ± 4.83; for girls 6.51 ± 4.77. The critical ratio of 1.21 is not significant. The pretest mean for boys of Control A is 8.37 ± 6.75; for girls 9.51 ± 5.10. The critical ratio of 0.80 is not significant. From this data it may be inferred that sex has no apparent influence upon gains in associating activities with the reading of social studies materials. It is interesting to note, however, that boys of Experimental exceed girls, while in Control A the reverse is true. Examination of Table XXXVI shows practically the same findings from the retest.

Table XXXVII, reorganizes the data of the preceding table in such manner as to compare growth made only by boys of both groups; Table XXXVIII compares that made by girls. In the pretest all boys gave evidence of relative ability. In the retest Experimental boys gained 13.85 points and the critical ratio of 9.11 is significant. Boys of Control A gained 2.73 points and the critical ratio of 1.60 is not significant. The significant gain for the pupils of Experimental may be attributed to the effectiveness of the teaching-learning cycle. Examination of Table XXXVIII reveals similar findings.

Table XXXVII. Pretest and Retest Activity Responses for Experimental and Control A--Boys

	Boys	No. Cases	Mean	S.Dm.	S.Em.	Actual Diff.m	S.E. Diff.	Critical Ratio
Exp.	Pretest	23	8.55	4.83	1.01	13.85	1.52	9.11
	Retest	23	22.40	5.44	1.13			
Cont. A	Pretest	35	8.37	6.75	1.14	2.73	1.71	1.60
	Retest	35	11.10	7.47	1.27			

Table XXXVIII. Pretest and Retest Activity Responses for Experimental and Control A--Girls

	Girls	No. Cases	Mean	S.Dm.	S.Em.	Actual Diff.m.	S.E. Diff.	Crit. Ratio
Exp.	Pretest	12	6.51	4.77	1.36	14.33	2.09	6.85
	Retest	12	20.84	5.50	1.58			
Cont. A	Pretest	36	9.51	5.10	0.85	3.24	1.62	2.00
	Retest	36	12.75	8.25	1.38			

From the foregoing discussion the following points may be noted: (1) Comparison of boys and girls gives no critical ratio which is significant. This leads to the inference that sex does not influence responses; (2) gains made by both boys and girls indicate that all pupils increased power through the teaching-learning cycle.

(B) Questions for Further Research

Comparison of Acceptable Data.-- Another purpose of the retest was to measure the quantitative changes in questions raised. Table XXXIX compares the results of both pretest and retest for Experimental. The pretest mean is 14.70 ± 5.19; the retest mean 21.63 ± 6.57. The critical ratio of 4.91 is significant. The pretest mean of Control A as 14.82 ± 6.12; the retest mean 15.96 ± 5.01.

Table XXXIX. Pretest and Retest Total Question Responses for Experimental

Experimental	No. Cases	Range	Mean	S.Dm.	S.Em.	Actual Diff.m	S.E. Diff.	Crit. Ratio
Pretest	35	3-26	14.70	5.19	0.88	6.93	1.41	4.91
Retest	35	12-38	21.63	6.57	1.11			

Table XL. Pretest and Retest Total Question Responses for Control A

Control A	No. Cases	Range	Mean	S.Dm.	S.Em.	Actual Diff.m	S.E. Diff.	Crit. Ratio
Pretest	71	0-32	14.82	6.12	0.73	1.14	.94	1.21
Retest	71	3-32	15.96	5.01	0.60			

Table XLI. Difference in Gain in Total Question Responses for Experimental and Control A

Group	No. Cases	Actual Gain	S.E. Gain	Diff. in Gain	S.E. Diff.	Critical Ratio
Experimental	35	6.93	1.41	5.79	1.69	3.43
Control A	71	1.14	0.94			

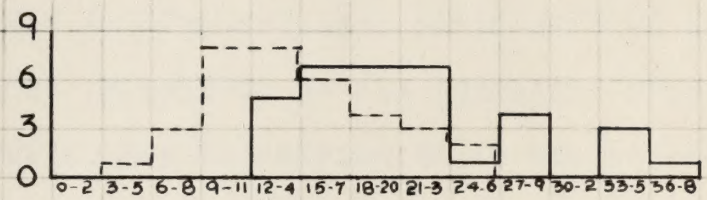


Figure 29. Experimental

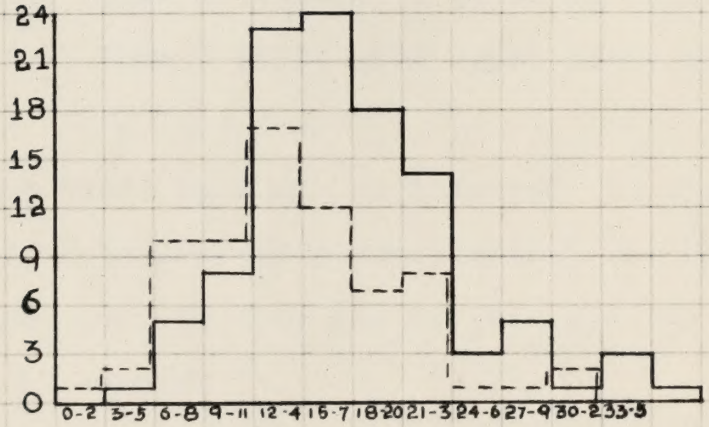


Figure 30. Control A

PRETEST AND RETEST
TOTALS
OF
QUESTION RESPONSES

The critical ratio of 1.21 is not significant.

Table XLI, on preceding page, compares the gain for Experimental with that for Control A. An increase of 6.93 points was made by Experimental, one of 1.14 by Control A. The critical ratio of 3.43 shows this difference in gain to be significant. This gain for Experimental may be attributed to the effectiveness of the teaching-learning cycle.

Figures 27 and 28 show both Experimental and Control A to retain their normal distributions. The retest range for Experimental shows an increase in the lower limit from 3 to 12; in the upper limit from 26 to 38. The retest range of Control A shows an increase in the lower limit from 0 to 3; the upper limit remaining at 32.

From these data may be inferred (1) that the teaching-learning cycle used with Experimental was for them effective, and (2) that the slight gain for Control A was due to chance.

Comparison of Unacceptable Responses.--The omission of unacceptable response data and any accompanying analysis is due to the fact that the number of such

responses was few and the resulting figures gave no significant data.

Comparison of Qualitative Data.-- The second objective was to measure qualitative changes in questions raised. Tables XLII - XLIV, the pretest and retest data concerning the only Enriching category, and Tables XLV - XLVII, give that for the Clarifying. The data for the Immature category were too fragmentary for analysis.

Table XLII gives the pretest mean of Enriching category for Experimental as 7.32 ± 4.59; the retest mean is 11.97 ± 4.38. The critical ratio, 4.31 is significant.

Table XLII. Pretest and Retest Enriching Question Responses for Experimental

Experimental	No. Cases	Mean	S.D.m.	S.Em.	Actual Diff.m	S.E. Diff.	Critical Ratio
Pretest	35	7.32	4.59	0.78	4.65	1.08	4.31
Retest	35	11.97	4.38	0.74			

Table XLIII. Pretest and Retest Enriching Question Responses for Control A

Control A	No.Cases	Mean	S.Dm	S.Em	Actual Diff.m	S.E. Diff.	Critical Ratio
Pretest	71	5.88	4.26	0.51	1.23	0.72	1.71
Retest	71	7.11	4.35	0.52			

Table XLIII, on preceding page, shows the pretest mean of the Enriching for Control A to be 5.88 ± 4.26; the retest mean 7.11 ± 4.35. The critical ratio, 1.71, is not significant.

Table XLIV, below, compares gain for Experimental with that for Control A. An increase of 4.65 points was made by Experimental, and one of 1.23 by Control A. The critical ratio of 2.63 indicated the chances to be 95 in 100 that the difference is too great to be the result of sampling fluctuations. This gain for Experimental may be attributed to the effectiveness of the teaching-learning cycle.

Table XLIV. Difference in Gain in Enriching Question Responses for Experimental and Control A

Group	No. Cases	Actual Gain	S.E. Gain	Diff. in Gain	S.E. Diff.	Critical Ratio
Experimental	35	4.65	1.08			
Control A	71	1.23	0.72	3.42	1.30	2.63

Table XLV, on next page, gives the pretest mean for the Clarifying category for Experimental as 3.21 ± 3.60; the retest mean as 2.43 ± 1.38. The critical ratio, 1.24, is not significant. Table XLVI gives the pretest mean

for the same category for Control A as 6.15 ± 5.45; the retest mean as 3.99 ± 3.12. The critical ratio, 2.92, is somewhat significant. Since the Clarifying category indicates an inferior type of question, it was one aim of the directed teaching to decrease the number of responses of this type. However, Control A exceeds Experimental in increased power. Evidently, poor reading habits were too well established in Experimental to permit noticeable gain in a short period of teaching.

Table XLV. Pretest and Retest Clarifying Question Responses for Experimental

Experimental	No. Cases	Mean	S.Dm	S.Em	Actual Diff.m	S.E. Diff.	Critical Ratio
Pretest	35	3.21	3.60	0.61	0.78	0.63	1.24
Retest	35	2.43	1.38	0.23			

Table XLVI. Pretest and Retest Clarifying Question Responses for Control A

Control A	No.Cases	Mean	S.Dm	S.Em	Actual Diff.m	S.E. Diff.	Critical Ratio
Pretest	71	6.15	5.34	0.64	2.16	0.74	2.92
Retest	71	3.99	3.12	0.37			

Table XLVII. Difference in Loss in Clarifying Question Responses for Experimental and Control A

Group	No. Cases	Actual Loss	S.E. Loss	Diff. in Loss	S.E. Diff.	Critical Ratio
Experimental	35	0.78	0.63	1.38	0.97	1.42
Control A	71	2.16	0.74			

Table XLVII, above, compares loss for Experimental with loss for Control A. An increase of 0.78 points was made by Experimental, and one of 2.16 by Control A. The critical ratio of 1.42 indicates the chances to be 68 in 100 that the difference is too great to be the result of sampling fluctuations.

From the foregoing data it may be inferred that (1) the teaching-learning cycle increased power of Experimental to raise the Enriching questions, and (2) the Clarifying questions are so dependent upon well-established reading skill that a brief period of directed teaching could not affect much change in responses.

Relation of Intelligence and Imitative Changes in Response.-- A third objective was to discover the relationship between intelligence and quantitative changes in questions raised. The reader is referred to the

discussion on page 169 for explanation concerning the omission of this analysis.

Relation of Sex Differences to Quantitative Changes in Responses.-- A fourth objective was to measure the relationship between sex differences and quantitative change in questions raised. Table XLVIII gives pretest question responses for Experimental and Control A organized according to sex. The pretest mean for the boys of Experimental is 15.84 ± 5.22; and for girls 11.25 ± 3.81. The critical ratio, 3.02, is significant. The pretest mean for boys of Control A is 15.90 ± 5.85; for girls 13.68 ± 6.24. The critical ratio, 1.54, is not significant.

Table XLVIII. Pretest Question Responses for Experimental and Control A Organized According to Sex

	Pretest	No. Cases	Mean	S.Dm	S.Em	Actual Diff.m	S.E. Diff.	Critical Ratio
Exp.	Boys	23	15.84	5.22	1.09	4.59	1.52	3.02
	Girls	12	11.25	3.81	1.06			
Cont. A	Boys	35	15.90	5.85	0.99	2.22	1.44	1.54
	Girls	36	13.68	6.24	1.04			

Table XLIX. Retest Question Responses for Experimental and Control A Organized According to Sex

	Retest	No. Cases	Mean	S.Dm	S.Em	Actual Diff.m	S.E. Diff.	Critical Ratio
Exp.	Boys	23	22.50	6.57	1.37	2.49	2.21	1.13
	Girls	12	20.01	6.24	1.73			
Cont. A	Boys	35	16.32	4.59	0.78	0.13	1.17	0.11
	Girls	36	15.57	5.28	0.88			

From this data it may be inferred that boys learn a bit more readily than girls to associate questions with social studies reading, but sex is not an influential factor. Examination of Table XLIX, above, shows that in the retest the gain, though very slight, is in favor of the boys, both for Experimental and Control A.

Table L reorganizes the data of the preceding tables in such a manner as to compare growth made only by boys of the two groups. Table LI compares growth made only by girls. In the pretest all boys gave evidence of relative ability. In the retest Experimental boys gained 6.66 points and the critical ratio of 3.81 is significant. Boys of Control A gained 0.42 points and the critical ratio of 0.33 is not significant. Examination of Table LI reveals comparisons for the girls to be quite

similar. The significant gains for the pupils of Experimental may be attributed to the effectiveness of the teaching-learning cycle.

Table L. Pretest and Retest Question Responses for Experimental and Control A--Boys

	Boys	No. Cases	Mean	S.Dm	S.Em	Actual Diff.m.	S.E. Diff.	Critical Ratio
Exp.	Pretest	23	15.84	5.22	1.09	6.66	1.75	3.81
	Retest	23	22.50	6.57	1.37			
Cont. A	Pretest	35	15.90	5.85	.99	.42	1.26	.33
	Retest	35	16.32	4.59	.78			

Table LI. Pretest and Retest Question Responses for Experimental and Control A--Girls

	Girls	No. Cases	Mean	S.Dm	S.Em	Actual Diff.m	S.E. Diff.	Critical Ratio
Exp.	Pretest	12	11.25	3.81	1.06	8.76	2.03	4.32
	Retest	12	20.01	6.24	1.73			
Cont. A	Pretest	36	13.68	6.24	1.04	2.51	1.36	1.87
	Retest	36	16.19	5.28	0.88			

From the foregoing discussion the following points may be noted: (1) The great increase in mean for girls of Experimental leads to the inference that these girls

made greater gains than boys due to the teaching-learning cycle; (2) both boys and girls of Experimental made significant gains through the teaching-learning cycle; (3) girls of Control A made greater gains than boys of Control A. However, this may be due entirely to chance; and (4) it may be assumed, therefore, that sex does not influence skill in this phase of associational reading.

From the foregoing discussion, the following summary statements may be made: (1) a highly significant gain was made by Experimental in associating activities with the reading of social studies materials; (2) the gain in the Creative activities for Experimental was highly significant; (3) the Intellectual and Manipulative activities failed to increase significantly; (4) sex seemed not to be a factor influencing gain in activity responses; (5) association of questions for Experimental showed a significant gain; (6) increase in the Enriching type of question for Experimental was not significant; (7) decrease in Clarifying questions for Experimental was not significant; and (8) boys of Experimental made some greater gains in question responses than girls.

(C) Illustrating a Specific Idea

Comparison of Acceptable Responses.-- Series II was designed to measure in how far the seventh grader uses his experiential knowledge to illustrate specific ideas presented in his social studies reading. One purpose of the retest was to measure the quantitative changes in illustrations of a specific idea. Table LII, compares the results of pretest and retest for Experimental. The pretest mean is 19.77 ± 6.15; the retest mean is 28.50 ± 8.40. The critical ratio of 4.93 is significant.

Table LII. Pretest and Retest of Total Illustration-of-a-Specific-Idea Responses for Experimental

Experimental	No.Cases	Range	Mean	S.Dm.	S.Em.	Actual Diff.m.	S.E. Diff.	Crit. Ratio
Pretest	35	6-35	19.77	6.15	1.04	8.73	1.77	4.93
Retest	35	12-47	28.50	8.40	1.44			

Table LIII. Pretest and Retest Total Illustration-of-a-Specific-Idea Responses for Control A

Control A	No.Cases	Range	Mean	S.Dm.	S.Em.	Actual Diff.m	S.E. Diff.	Crit. Ratio
Pretest	71	3-62	20.85	9.30	1.11	1.83	1.54	1.19
Retest	71	6-56	22.68	8.97	1.07			

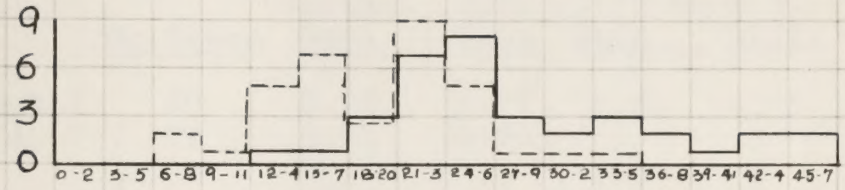


Figure 31. Experimental

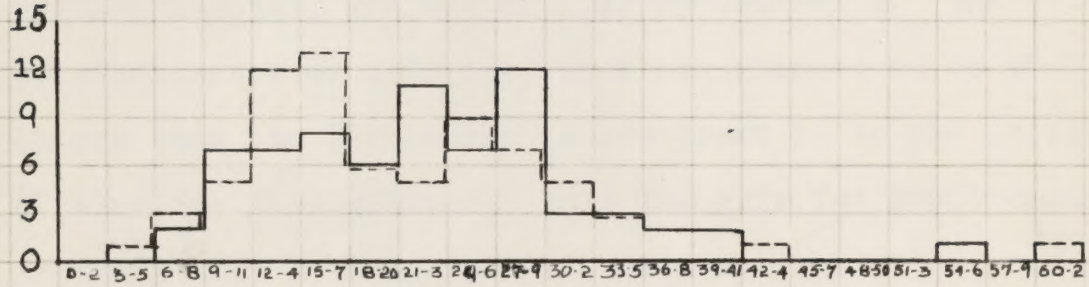


Figure 32. Control A

PRETEST AND RETEST
TOTALS
OF
ILLUSTRATION-OF-A-SPECIFIC-IDEA
RESPONSES

Table LIV. Difference in Gain in Total Illustration-of-a-Specific-Idea Responses for Experimental and Control A

Group	No. Cases	Actual Gain	S.E. Gain	Diff. in Gain	S.E. Diff.	Critical Ratio
Experimental	35	8.73	1.77	6.90	2.35	2.94
Control A	71	1.83	1.54			

Table LIII, on preceding page, shows the pretest mean for Control A to be 20.85 ± 9.30; the retest mean to be 22.68 ± 8.97. The critical ratio of 1.19 ± is not significant.

Table LIV, above, compares gain for Experimental with that for Control A. An increase of 8.73 was made by Experimental, and one of 1.83 by Control A. The critical ratio of 2.94 indicates the chances to be 95 in 100 that the difference is too great to be the result of sampling fluctuations. This low gain for Experimental indicates the need on the part of some pupils for more experience with this type of associational reading than the teaching-learning cycle provided.

Figure 31 shows Experimental to have retained its normal distribution, but to have moved along the x-axis to a higher scoring level. No pupil of Experimental failed to make less than 6 responses. This gain in both mean

Table LIV. Difference in Gain in Total Illustration-of-a-Specific-Idea Responses for Experimental and Control A

Group	No. Cases	Actual Gain	S.E. Gain	Diff. in S.E. Diff.	Critical Ratio
Experimental	85	8.75	1.77	6.90 2.85	2.84
Control A	71	1.85	1.54		

Table LIII, on preceding page, shows the pretest mean for Control A to be 20.85 ± 9.80; the retest mean to be 22.68 ± 8.97. The critical ratio of 1.19 is not significant.

Table LIV, above, compares gain for Experimental with that for Control A. An increase of 8.75 was made by Experimental, and one of 1.85 by Control A. The critical ratio of 2.84 indicates the chances to be 95 in 100 that the difference is too great to be the result of sampling fluctuations. This low gain for Experimental indicates the need on the part of some pupils for more experience with this type of associational reading than the teaching-learning cycle provided.

Figure 21 shows Experimental to have retained its normal distribution, but to have moved along the x-axis to a higher scoring level. No pupil of Experimental failed to make less than 3 responses. This gain in both mean

and range may be interpreted to signify that this teaching-learning cycle effected increased power in use of illustrations while reading. Figure 32 shows Control A to have retained a distribution similar to the pretest. The slight gain made by Control A may be due to normal pupil progress or merely to chance.

Comparison of Unacceptable Responses.-- The data of the next three tables show the presence of unacceptable responses. Table LV gives the pretest mean for Experimental as 3.45 ± 2.67; the retest mean as 2.79 ± 2.52. The critical ratio of 0.94 is not significant. Table LVI shows the pretest mean for Control A to be 5.43 ± 9.69; the retest mean to be 3.27 ± 2.96. The critical ratio of 1.80 is not significant.

Table LV. Pretest and Retest Unacceptable Illustration-of-a-Specific-Idea Responses for Experimental

Experimental	No.Cases	Range	Mean	S.Dm.	S.Em.	Actual Diff.m	S.E. Diff.	Crit. Ratio
Pretest	35	0-11	3.45	2.67	0.56	0.66	0.70	0.94
Retest	35	0-14	2.79	2.52	0.43			

Table LVI. Pretest and Retest Unacceptable Illustration-of-a-specific-Idea Responses for Control A

Control A	No.Cases	Range	Mean	S.Dm.	S.Em.	Actual Diff.m	S.E. Diff.	Crit. Ratio
Pretest	71	0-78	5.43	9.69	1.15	2.16	1.20	1.80
Retest	71	0-14	3.27	2.91	0.35			

Table LVII. Difference in Loss in Unacceptable Illustration-of-a-Specific-Idea Responses for Experimental and Control A

Group	No. Cases	Actual Loss	S.E. Loss	Diff. in Loss	S.E. Diff.	Critical Ratio
Experimental	35	0.66	0.70	1.50	1.39	1.08
Control A	71	2.16	1.20			

Table LVII, above, compares loss for Experimental with that for Control A. A decrease of 0.66 points was made by Experimental, and one of 2.16 by Control A. The critical ratio of 1.08 indicates the chances to be 68 in 100 that the difference is too great to be the result of sampling fluctuations. These data indicate the loss for Experimental to be less than that for Control A. It may be inferred, than, that some of the pupils in Experimental need more experience in the type of associational reading than the directed teaching provided.

From the foregoing it may be noted that the gain for Experimental after the teaching-learning cycle was too small to be significant.

Comparison of Qualitative Data.-- The second objective was to measure the qualitative changes in illustrations of a specific idea. In Table LVIII - LX, are presented pretest and retest data for only the Specific category,

Table LVII. Difference in Loss in Unacceptable Illustration-of-a-Specific-Idea Responses for Experimental and Control A

Group	No. Cases	Actual Loss	S.E. Loss	Diff. in Loss	S.E. Diff.	Critical Ratio
Experimental	35	0.66	0.70	1.80	1.39	1.08
Control A	71	2.16	1.80			

Table LVII, above, compares loss for Experimental with that for Control A. A decrease of 0.66 points was made by Experimental, and one of 2.16 by Control A. The critical ratio of 1.08 indicates the chances to be 68 in 100 that the difference is too great to be the result of sampling fluctuations. These data indicate the loss for Experimental to be less than that for Control A. It may be interred, then, that some of the pupils in Experimental need more experience in the type of associational reading than the directed teaching provided.

From the foregoing it may be noted that the gain for Experimental after the teaching-learning cycle was too small to be significant.

Comparison of Qualitative Data.-- The second objective was to measure the qualitative changes in illustrations of a specific idea. In Table LVII - IX, are presented pretest and retest data for only the Specific category,

and in Tables LXI - LXIII, on page 191, the same data for the Incompatible. The General category was too similar to Specific in type for analysis; the Indefinite data was too fragmentary to be significant.

Table LVIII, below, shows the pretest mean for the Specific category for Experimental to be 7.77 ± 4.08; the retest mean to be 13.92 ± 5.70. The critical ratio of 5.21 is significant. Table LIX, on below, shows the pretest mean for Control A to be 5.13 ± 3.63; the retest mean to be 7.32 ± 4.65. The critical ratio of 3.17 is also significant.

Table LVIII. Pretest and Retest Illustration-of-a-Specific Idea Responses of Specific Type for Experimental

Experimental	No.Cases	Range	Mean	S.Dm.	S.Em.	Actual Diff.m	S.E. Diff.	Crit. Ratio
Pretest	35	0-17	7.77	4.08	0.69	6.15	1.18	5.21
Retest	35	6-32	13.92	5.70	0.96			

Table LIX. Pretest and Retest Illustration-of-a-Specific Idea Responses of Specific Type for Control A

Control A	No.Cases	Range	Mean	S.Dm.	S.Em.	Actual Diff.m	S.E. Diff.	Crit. Ratio
Pretest	71	0-17	5.13	3.63	0.43	2.19	0.69	3.17
Retest	71	0-23	7.32	4.65	0.55			

and in Tables LXI - LXIII, on page [illegible], the same data for the Incompetible. The General category was too similar to Specific in type for analysis; the Indefinite data was too fragmentary to be significant.

Table LVIII, [illegible], shows the pretest mean for the Specific category for Experimental to be 7.77 ± 4.08; the retest mean to be 13.92 ± 5.70. The critical ratio of 5.81 is significant. Table LIX, [illegible], shows the pretest mean for Control A to be 5.13 ± 3.65; the retest mean to be 7.32 ± 4.65. The critical ratio of 3.17 is also significant.

Table LVIII. Pretest and Retest Illustration-of-a-Specific Idea Responses of Specific Type for Experimental

Experimental	No. Cases	Range	Mean	S.Dm.	S.Em.	Diff.m	Diff.	Actual S.E.	Crit. Ratio
Pretest	35	0-17	7.77	4.08	0.69	5.81	1.16	5.21	
Retest	35	6-32	13.92	5.70	0.96				

Table LIX. Pretest and Retest Illustration-of-a-Specific Idea Responses of Specific Type for Control A

Control A	No. Cases	Range	Mean	S.Dm.	S.Em.	Diff.m	Diff.	Actual S.E.	Crit. Ratio
Pretest	71	0-17	5.13	3.65	0.43	2.19	0.65	3.17	
Retest	71	0-28	7.32	4.65	0.55				

Table LX. Difference in Gain in Illustration-of-a-Specific-Idea Responses of Specific Type for Experimental and Control A

Group	No. Cases	Actual Gain	S.E. Gain	Diff. in Gain	S.E. Diff.	Crit. Ratio
Experimental	35	6.15	1.18	3.96	1.37	2.89
Control A	71	2.19	0.69			

Table LX, above, compares the gain for Experimental with that for Control A. An increase of 6.15 points was made by Experimental and one of 2.19 by Control A. The critical ratio of 2.89 indicates the chances to be 95 in 100 that the difference is too great to be the result of sampling fluctuations. Here, again, while Experimental made some gain, pupils evidently needed more experience with the type of associational reading than the teaching-learning cycle provided.

Table LXI, gives the pretest mean for the Incompatible category for Experimental as 3.30 $\pm$ 2.61; the retest mean as 4.17 $\pm$ 2.76. The critical ratio of 1.36 is not significant. Table LXII gives the pretest mean for the same category for Control A as 4.53 $\pm$ 3.30; the retest mean as 4.74 $\pm$ 4.08. The critical ratio of 0.34 is not significant.

Table IX. Difference in Gain in Illustration-of-a-Specific-Idea Responses of Specific Type for Experimental and Control A

Group	No. Cases	Actual Gain	S.E. Gain	Diff.	S.E. Diff.	Crit. Ratio
Experimental	38	6.16	1.18	5.96	1.97	3.02
Control A	71	2.19	0.09			

Table LXI. Pretest and Retest Illustration-of-a-Specific Idea Responses of Incompatible Type for Experimental

Experimental	No. Cases	Range	Mean	S.Dm.	S.Em.	Actual Diff. m.	S.E. Diff.	Crit. Ratio
Pretest	35	0-11	3.30	2.61	0.44	0.87	0.64	1.36
Retest	35	0-11	4.17	2.76	0.47			

Table LXII. Pretest and Retest Illustration-of-a-Specific Idea Responses of Incompatible Type for Control A

Control A	No. Cases	Range	Mean	S.Dm.	S.Em.	Actual Diff. m	S.E. Diff.	Crit. Ratio
Pretest	71	0-17	4.53	3.30	0.39	0.21	0.62	0.34
Retest	71	0-20	4.74	4.08	0.49			

Table LXIII. Difference in Gain in Illustration-of-a-Specific Idea Responses of Incompatible Type for Experimental and Control A

Group	No. Cases	Actual Gain	S.E. Gain	Diff. in Gain	S.E. Diff.	Critical Ratio
Experimental	35	0.87	0.64	0.66	0.89	0.74
Control A	71	0.21	0.62			

Table LXIII, above, compares gain for Experimental with that for Control A. An increase of 0.87 points was made by Experimental, and one of 0.21 by Control A. The critical ratio of 0.74 indicates the chances to be

less than 68 in 100 that the difference is too great to be the result of sampling fluctuations.

Incompatible responses indicated failure to comprehend the concept of "strategy." Therefore, one aim of the directed teaching was to decrease the number of responses in this category. However, the retest shows gain in the Experimental group. From these data it may be inferred that the concept of Exercise IV, wherein most of the responses occurred, is too abstract for the seventh grader to analyze for illustration from experiential knowledge.

Relationship of Intelligence to Quantitative Changes in Response.-- A third objective was to measure the relationship between intelligence and the quantitative change in illustrations of a specific idea. The reader is referred to the discussion on page 155 for explanation concerning the omission of this analysis.

Relationship of Sex Differences to Quantitative Changes in Response.-- A fourth objective was to measure the relationship between sex differences and quantitative change in illustrations applied. Table LXIV gives pretest illustration-of-a-specific-idea responses for Experimental and Control A groups organized according to sex.

Table LXIV. Pretest Illustration-of-a-Specific-Idea Responses for Experimental and Control A Organized According to Sex

	Pretest	No. Cases	Range	Mean	S.Dm.	S.Em.	Actual Diff.m	S.E. Diff.	Crit. Ratio
Exp.	Boys	23	6-35	20-94	6.00	1.25	3.45	2.02	1.71
	Girls	12	6-32	17.49	5.58	1.59			
Cont. A	Boys	35	3-62	23.61	9.93	1.68	5.43	2.12	2.56
	Girls	36	3-44	18.18	7.80	1.30			

Table LXV. Retest Illustration-of-a-Specific-Idea Responses for Experimental and Control A Organized According to Sex

	Retest	No. Cases	Range	Mean	S.Dm.	S.Em.	Actual Diff.m.	S.E. Diff.	Crit. Ratio
Exp.	Boys	23	12.47	30.45	7.59	1.58	5.70	2.92	1.95
	Girls	12	12.47	24.75	8.58	2.45			
Cont. A	Boys	35	9-41	23.79	7.65	1.30	2.22	2.12	1.05
	Girls	36	6-56	21.57	9.99	1.67			

The pretest mean for the boys of Experimental is 20.94 ± 6.00; and for girls 17.49 ± 5.58. The critical ratio of 1.71 is not significant. The pretest mean for boys of Control A is 23.61 ± 9.93; and for girls 18.18 ± 7.80. The critical ratio of 2.56 is not significant. In neither group was the difference between sexes of statistical

significance. It is interesting to note, however, that in both groups the boys exceed the girls. Examination of Table LXV shows that in the retest the data presents similar results.

Table LXVI reorganizes the data of the preceding tables in such manner as to compare growth made only by the boys of the two groups; Table LXVII compares growth made only by girls. In the pretest all boys gave evidence of relative ability. In the retest Experimental boys gained 9.50 points and the critical ratio of 4.73 is significant. The boys of Control A gained 0.18 points and the critical ratio of 0.08 is not significant. Examination of Table LXVII reveals relative ability of girls in both tests. The critical ratio of 2.49 for girls of Experimental is not significant.

Table LXVI. Pretest and Retest Illustration-of-a-Specific Idea Responses for Experimental and Control A--Boys

	Boys	No. Cases	Range	Mean	S.Dm.	S.Em.	Actual Diff.m	S.E. Diff.	Crit. Ratio
Exp.	Pretest	23	6-35	20-94	6.00	1.25	9.50	2.01	4.73
	Retest	23	12-47	30-95	7.59	1.58			
Cont A	Pretest	35	3-62	23.61	9.93	1.68	0.18	2.12	0.08
	Retest	35	9-41	23.79	7.65	1.30			

Table LXVII. Pretest and Retest Illustration-of-a-Specific Idea Responses for Experimental and Control A--Girls

	Girls	No. Cases	Range	Mean	S.Dm.	S.Em.	Actual Diff. m.	S.E. Diff.	Crit. Ratio
Exp.	Pretest	12	6-32	17.49	5.58	1.59	7.26	2.92	2.49
	Retest	12	12-47	24.75	8.58	2.45			
Cont. A	Pretest	36	3-44	18.18	7.80	1.30	3.39	2.12	1.60
	Retest	36	6-56	21.57	9.99	1.67			

From this data it may be inferred that (1) the seventh grade boy is more ready than the girl to illustrate specific ideas of social studies from experiential knowledge, and (2) that the pupils in Experimental needed more experiences with this type of associational reading than the teaching-learning cycle provided.

From the foregoing discussion it may be noted that: (1) Experimental did not make significant gains over Control A in illustrating a specific idea presented in social studies reading; (2) Specific responses do not show a gain for Experimental of statistical significance; (3) Incompatible responses indicate gain for Experimental

rather than the desired loss; and (4) sex would appear to have some influence in development of this reading skill in the seventh grader.

(D) Illustrating a Generalization

Comparison of Acceptable Responses.-- Series III was designed to measure in how far the seventh grader uses his experimental knowledge to illustrate generalizations found in his social studies reading. One purpose of the retest was to measure the quantative change in illustrations of a generalization. Table LXIX, compares the results of pretest and retest for Experimental. The present mean is 7.17 - 3.78; the retest mean 18.57 - 5.01. The critical ratio of 10.75 is highly significant. Table LXX shows the pretest mean for Control A to be 7.50-5.88; the retest mean 16.29 - 9.45. The critical ratio of 6.66 is significant.

Table LXIX. Pretest and Retest Total Illustration-of-a- Generalization Responses for Experimental

Experimental	No.Cases	Range	Mean	S.Dm.	S.Em.	Actual Diff.m	S.E. Diff.	Crit. Ratio
Pretest	35	0-17	7.17	3.78	0.64	11.40	1.06	10.75
Retest	35	9-32	18.57	5.01	0.85			

Table LXX. Pretest and Retest Total Illustration-of-a-Generalization Responses for Control A

Control A	No. Cases	Range	Mean	S.Dm.	S.Em.	Actual Diff.m	S.E. Diff.	Crit. Ratio
Pretest	71	0-26	7.50	5.88	0.70	8.79	1.32	6.66
Retest	71	0-50	16.29	9.45	1.12			

Table LXXI. Difference in Gain of Total Illustration-of-a-Generalization Responses for Experimental and Control A

Group	No. Cases	Actual Gain	S.E. Gain	Diff. in Gain	S.E. Diff.	Critical Ratio
Experimental	35	11.40	1.06	2.61	1.69	1.54
Control A	71	8.79	1.32			

Table LXXI, above, compares gain for Experimental with that for Control A. An increase of 11.40 points was made by Experimental, and one of 8.79 by Control A. The critical ratio of 1.54 indicates the chances to be 68 in 100 that the difference is too great to be the result of sampling fluctuations. This data indicates the gain for Experimental to be insignificant. This lack of significance may indicate the need on the part of most pupils for more experience with this type of associational

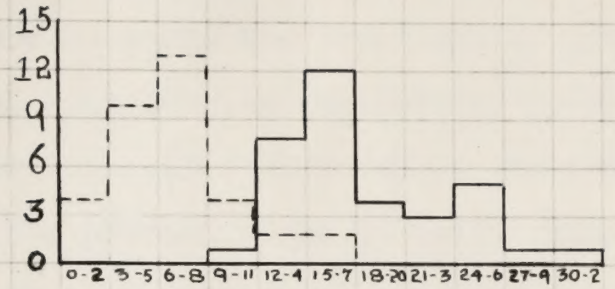


Figure 33. Experimental

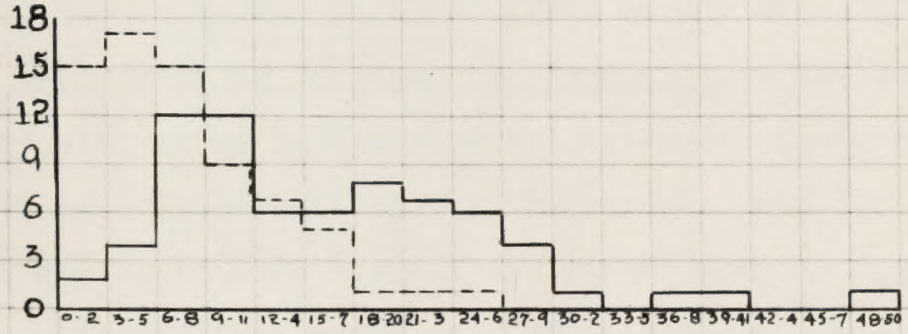


Figure 34. Control A

PRETEST AND RETEST

TOTALS

OF

ILLUSTRATION-OF-A-GENERALIZATION

RESPONSES

reading than the teaching-learning cycle provided.

Figure 33 shows the Experimental group to have lost its normal distribution concentration occurring in the two lowest intervals. However, a new range of 12-32 replaces the pretest range of 0-17. Figure 34 shows the Control A group to have retained a normal distribution with cases spreading into the higher intervals. The raising of the lower range limit from 0 to 12 indicates that every child through the directed teaching learned to illustrate a social studies generalization from experiential knowledge. The gain made by Control A may be due to normal pupil progress merely or to chance.

Comparison of Unacceptable Responses.-- The data of the next three tables show the presence of unacceptable responses. Table LXXII gives the pretest mean for Experimental as 5.19 $\pm$ 4.71; the retest mean as 1.83 $\pm$ 0.96. The critical ratio of 4.10 is significant. Table LXXIII gives the pretest mean for Control A as 7.50 $\pm$ 5.88; the retest mean as 6.87 $\pm$ 8.07. The critical ratio of 0.53 is not significant.

Table LXXII. Pretest and Retest Unacceptable Illustration of-a-Generalization Responses for Experimental

Experimental	No.Cases	Range	Mean	S.Dm.	S.Em.	Actual Diff.m	S.E. Diff.	Crit. Ratio
Pretest	35	0-20	5.19	4.71	0.80	3.36	0.82	4.10
Retest	35	0-5	1.83	0.96	0.16			

Table LXXIII. Pretest and Retest Unacceptable Illustration of-a-Generalization Responses for Control A

Control A	No.Cases	Range	Mean	S.Dm.	S.Em.	Actual Diff.m	S.E. Diff.	Crit. Ratio
Pretest	71	0-26	7.50	5.88	0.70	0.63	1.19	0.53
Retest	71	0-26	6.87	8.07	0.96			

Table LXXIV. Difference in Loss in Unacceptable Illustration-of-a-Generalization Responses for Experimental and Control A

Group	No. Cases	Actual Loss	S.E. Loss	Diff. in Loss	S.E. Diff.	Crit. ratio
Experimental	35	3.36	.82	2.73	1.45	1.88
Control A	71	0.63	1.19			

Table LXXIV, above, compares the loss for Experimental with that for Control A. A decrease of 3.36 points was made by Experimental and one of 0.63 by Control A. The critical ratio of 1.88 indicates the chances to be 68 in

100 that the difference is too great to be the result of sampling fluctuations. These data indicate the loss for Experimental to be insignificant. From this it may be inferred that most Experimental pupils needed more experience with this type of associational reading than the teaching-learning cycle provided.

Comparison of Qualitative Data.-- The second objective was to measure the qualitative change in illustrations of a generalization. In Tables LXXV - LXXVII are presented pretest and retest data for only Specific category, and in Tables LXXVIII - LXXX, the same data for the Inadequate. The General was too similar in type to the Specific for analysis; the other two types presented data too fragmentary to be significant.

Table LXXV shows the pretest mean for the Specific category for Experimental to be 1.68 $\pm$ 0.72; the retest mean to be 6.88 $\pm$ 3.24. The critical ratio of 9.28 is significant. Table LXXVI shows the pretest mean for Control A to be 1.62 $\pm$ 0.60; the retest mean to be 2.10 $\pm$ 1.95. The critical ratio of 2.18 is not significant.

Table LXXVII, on next page, compares the gain for Experimental with that for Control A. An increase of

5.20 was made by Experimental, one of 0.48 by Control A. The critical ratio of 8.00 is highly significant. The gain for Experimental may be attributed to the effectiveness of the teaching-learning cycle.

Table LXXV. Pretest and Retest Illustration-of-a-Generalization Responses of Specific Type for Experimental

Experimental	No. Cases	Range	Mean	S.Dm	S.Em	Actual Diff.m	S.E. Diff.	Crit. Ratio
Pretest	35	0-5	1.68	0.72	0.12	5.20	0.56	9.28
Retest	35	0-14	6.88	3.24	0.55			

Table LXXVI. Pretest and Retest Illustration-of-a-Generalization Responses of Specific Type for Control A

Control A	No. Cases	Range	Mean	S.Dm	S.Em	Actual Diff.m	S.E. Diff.	Crit. Ratio
Pretest	71	0-5	1.62	0.60	0.07	0.48	0.22	2.18
Retest	71	0-14	2.10	1.95	0.23			

Table LXXVII. Difference in Gain in Illustration-of-a-Generalization Responses of Specific Type for Experimental and Control A

Group	No. Cases	Actual Gain	S.E. Gain	Diff. in Gain	S.E. Diff.	Crit. Ratio
Experimental	35	5.20	0.56	4.72	0.59	8.00
Control A	71	0.48	0.22			

Table LXXVIII gives the pretest mean for the Inadequate category for Experimental as 1.50 ± 0.00 ; the retest mean as 3.30 ± 2.70. The critical ratio of 4.09 is significant. Table LXXIX gives the pretest mean for the same category for Control A as 1.68 ± 0.72; the retest mean as 1.74 ± 1.20. The critical ratio of 0.35 is not significant.

Table LXXX, compares gain for Experimental with that for Control A. An increase of 1.80 points was made by Experimental, and one of 0.06 by Control A. The critical ratio of 3.70 is significant.

Table LXXVIII. Pretest and Retest Illustration-of-a-Generalization Responses of Inadequate Type for Experimental

Experimental	No. Cases	Range	Mean	S.Dm	S.Em	Actual Diff.m	S.E. Diff.	Crit. Ratio
Pretest	35	0-2	1.50	0	0	1.80	0.44	4.09
Retest	35	0-11	3.30	2.70	0.44			

Table LXXIX. Pretest and Retest Illustration-of-a-Generalization Responses of Inadequate Type for Control A

Control A	No. Cases	Range	Mean	S.Dm	S.Em	Actual Diff.m	S.E. Diff.	Crit. Ratio
Pretest	71	0-5	1.68	0.72	0.09	0.06	0.17	0.35
Retest	71	0-11	1.74	1.20	0.14			

Table LXXX. Difference in Gain in Illustration-of-a-Generalization Responses of Inadequate Type for Experimental and Control A

Group	No. Cases	Actual Gain	S.E. Gain	Diff. in Gain	S.E. Diff.	Crit. Ratio
Experimental	35	1.80	0.44	1.74	0.47	3.70
Control A	71	0.06	0.17			

The Inadequate responses indicated failure to illustrate the entire thought of the given generalization. Therefore, one aim of the directed teaching was to decrease the number of responses of this type. However, the retest shows significant gains for the Experimental group. From this data it may be inferred that the two-fold generalization of Exercise VIII, wherein most of these responses occurred, is too complex for the seventh grader to analyze and illustrate from experiential knowledge.

Relationship of Intelligence to Quantitative Changes in Responses.-- A third objective was to measure the relationship between intelligence and quantitative changes in illustrations of a generalization. The reader is referred to the discussion on page 169 for an explanation of the omission of this discussion.

Relationship of Sex Differences to Quantitative Changes in Response.-- A fourth objective was to measure the

relationship between sex differences and quantitative change in illustrations of a generalization applied. Table LXXXI gives pretest illustration-of-a-generalization responses for Experimental and Control A organized according to sex. The pretest mean for the boys of Experimental is 7.50 ± 4.35; and that for the girls 6.00 ± 2.28. The critical ratio of 1.34 is not significant. The pretest mean for the boys of Control A is 7.95 ± 5.22, and that for the girls 7.68 ± 5.70. The critical ratio of 0.21 is not significant.

Table LXXXI. Pretest Illustration-of-a-Generalization Responses for Experimental and Control A Organized According to Sex

	Pretest	No. Cases	Range	Mean	S.Dm	S.Em	Actual Diff.m	S.E. Diff.	Crit. Ratio
Exp.	Boys	23	0-17	7.50	4.35	0.91	1.50	1.12	1.34
	Girls	12	0-11	6.00	2.28	0.65			
Cont. A	Boys	35	0-20	7.95	5.22	0.88	0.27	1.29	0.21
	Girls	36	0-26	7.68	5.70	0.95			

Table LXXXII. Retest Illustration-of-a-Generalization Responses for Experimental and Control A Organized According to Sex

	Retest	No. Cases	Range	Mean	S.Dm	S.Em	Actual Diff.m	S.E. Diff.	Crit. Ratio
Exp.	Boys	23	12-32	21.99	5.40	1.12	5.25	1.56	3.37
	Girls	12	12-26	16.74	3.78	1.08			
Cont. A	Boys	35	0-50	17.52	10.95	1.86	2.52	2.22	1.13
	Girls	36	0-29	15.0	7.23	1.21			

Examination of retest results in Table LXXXII shows significant difference in favor of the boys of Experimental. A difference of little significance is shown between boys and girls of Control A. From this data it may be inferred that the seventh grade boy is more ready than the girl to illustrate social studies generalizations from experiential knowledge.

Table LXXXIII reorganizes the data of the preceding tables in such manner as to compare growth made only by the boys of the two groups; Table LXXXIV compares that made by the girls. The pretest mean for the boys of Experimental is 7.50 $\pm$ 4.35; the retest mean 21.99 $\pm$ 5.40. The critical ratio of 10.06 is significant. The pretest mean for boys of Control A is 7.95 $\pm$ 5.22; the retest mean 17.52 $\pm$ 10.95. The critical ratio of 4.65 is significant. Examination of Table LXXXIV shows that the data for girls is similar. From this data it may be inferred that both boys and girls made significant gains through the teaching-learning cycle.

From the foregoing discussion it may be noted that: (1) Experimental made very little gain over Control A in illustrating a generalization presented in social studies reading; (2) Specific responses show a highly significant

gain; (3) Inadequate responses indicate significant gain for Experimental rather than the desired loss; and (4) sex is not shown to be an influential factor.

Table LXXXIII. Pretest and Retest Illustration-of-a-Generalization Responses for Experimental and Control A--Boys

	Boys	No. Cases	Range	Mean	S.Dm	S.Em	Actual Diff.m	S.E. Diff.	Crit. Ratio
Exp.	Pretest	23	0-17	7.50	4.35	0.91	14.49	1.44	10.06
	Retest	23	12-32	21.99	5.40	1.12			
Cont. A	Pretest	35	0-20	7.95	5.22	0.88	9.57	2.06	4.65
	Retest	35	0-50	17.52	10.95	1.86			

Table LXXXIV. Pretest and Retest Illustration-of-a-Generalization Responses for Experimental and Control A--Girls

	Girls	No. Cases	Range	Mean	S.Dm	S.Em	Actual Diff.m	S.E. Diff.	Crit. Ratio
Exp.	Pretest	12	0-11	6.00	2.28	.65	10.74	1.26	8.55
	Retest	12	12-26	16.74	3.78	1.08			
Cont. A	Pretest	36	0-26	7.68	5.70	.95	7.32	1.54	4.75
	Retest	36	0-29	15.0	7.23	1.21			

Summary

The purpose of this investigation was to discover in how far reading in the social studies field stimulates free associational thinking by the seventh grader. Associational reading was broken down into three phases--(1) stimulation to both self-expression through activity and questioning for further research; (2) use of experiential knowledge to illustrate a specific idea; and (3) use of experiential knowledge to illustrate a generalization. Since no available test satisfied the criteria an original one was built.

This test was administered to 243 seventh grade pupils in two school systems. Every observable indication pointed to the fact that the teaching methods in use were comparable. Both groups were representative of a wide range of socio-economic background; and both were normal in distribution of intelligence and chronological age.

Preliminary examination of test results indicated that pupils showed little ability to do some phases of this free associational reading. Therefore, instructional materials were devised by the writer, used by an experimental teacher with her group, and followed by a

second administration of the test.

From the results of this second testing the following inferences may be made:

(A) Suggestions for Activities

(1) Significant gain after the teaching-learning cycle.

After directed teaching significant gain was made in associating activities with reading in the social studies. These facts presume that the seventh grader is able, but has not been taught to do this type of associational reading.

(2) Significant gain in the Creative type of response.

After the directed teaching significant gain was made in the Creative category of activities, this may indicate that the seventh grader conceives this type of activity more readily than any other type.

After directed teaching some gain was made in the Intellectual and Manipulative categories. However, these limited returns may presume either lack of interest or unfamiliarity with these types.

(3) Some relationship between intelligence and number of responses.

Little active influence seems to be exerted by intelligence upon the number of responses. This may presume the possibility of teaching with some degree this phase of associational reading to all pupils.

(4) Slight relationship between sex differences

and the number of responses.

There was no significant difference between responses of boys and girls, after the directed teaching. This may presume that sex is not a vital factor in determining the development of power in associating activities with social studies reading.

(B) Questions for Further Research

(1) Significant gain after teaching-learning cycle.

After directed teaching significant gain was made in associating questions with social studies reading. These facts may presume that the seventh grader already has some power in this reading skill, but is capable of developing greater facility.

(2) Some gain in the superior type of question.

After the directed teaching thought-provoking questions were more numerous, but not enough to be significantly so. This may presume the probability that this type of questioning is a comparatively difficult skill to acquire.

Clarifying questions decreased by a slight number after the directed teaching. Since this type of response follows poor reading, this loss may mean that the teaching period was too brief to effect much change.

(3) Little relationship between intelligence and number of responses.

In the pretest no active influence seemed to be exerted by intelligence upon the number of responses. It was simply assumed therefore that gains after directed teaching would show similar results.

(4) Slight relationship between sex differences and number of responses.

After the directed teaching a very slight difference occurs, between responses of boys and girls. This may presume that sex is not too vital a factor in determining the development of power in associating questions with social studies reading.

(C) Illustrating a Specific Idea

(1) Small gain after the teaching-learning cycle.

Most seventh grade pupils readily illustrated specific ideas from experiential knowledge in the pretest. After the directed teaching some gain was made, but not enough to be significant. This may indicate the difficulty of this type of associational reading to be such that the seventh grader requires a longer teaching period.

(2) Some gain in the superior type of response.

Illustrations of the Specific type were not prevalent in the pretest. After the directed teaching these responses showed some gain, but not enough to be significant. This may indicate the difficulty of this type of associational reading to be such that the seventh grader requires a longer teaching period.

Exercise IV presented an unfamiliar, abstract concept to be illustrated. Response in the pretest showed inability to comprehend this concept or to analyze it for illustration. After the directed teaching gain rather than loss in these responses was made. This may presume the advisability of illustrating only simple, concrete ideas at this grade level.

(3) Little relationship between intelligence and number of responses.

In the pretest no active influence seemed to be exerted by intelligence upon the number of responses in the pretest. Therefore, it was simply assumed that gain after directed teaching would show similar results.

(4) Some relationship between sex differences and gain after directed teaching.

No relationship between sex differences and responses was indicated by the results of the pretest. After the directed teaching, however, responses of the boys almost doubled those of the girls. This may presume a readiness on the part of the boys to use experiential knowledge in the illustration of specific ideas presented in social studies reading.

(D) Illustrating a Generalization

(1) Most pupils failed to use experiential knowledge in satisfactory illustrations of the generalizations given in the pretest. After directed teaching small gains were made, but not large enough to be significant. This may presume the difficulty of this phase of associational reading to be such that the seventh grader requires a longer teaching period.

(2) Significant gain in the superior type of response after the teaching-learning cycle.

Responses of the superior type in the pretest indicated little power to illustrate a generalization from experiential knowledge. After the directed teaching gain in these responses showed high degree of significance. This may presume the possibility of teaching

the seventh grader to do this type of associational reading.

Exercise VIII presented a two-fold generalization to be illustrated. Response in the pretest showed inability to comprehend this concept nor to analyze it for illustration. After the directed teaching gain rather than loss in these responses was made. This may presume the advisability of illustrating only simple generalizations familiar in content at this grade level.

(3) Little relationship between intelligence and number of responses.

In the pretest no active influence seemed to be exerted by intelligence upon the number of responses in the pretest. It was simply assumed therefore that gain made after directed teaching would show similar results.

(4) No relationship between sex differences and number of responses.

No significant relationship between sex differences and number of responses was indicated by the results of the pretest. After the directed teaching, however, gain for the boys was more significant than that for the girls. This may presume a readiness on the part of the seventh grade boys to use experiential knowledge in the illustration of generalizations presented in social studies reading.

CHAPTER VII

SUMMARY OF THE INVESTIGATION WITH A VIEW TO ITS EDUCATIONAL IMPLICATIONS

Summary of Procedure

The purpose of this investigation is (1) to measure the extent to which the "average seventh grader" practices spontaneous associational thinking while reading in the social studies field, and (2) to determine in how far growth in power would result from directed teaching of this associational reading. The study is concerned with three phases of associational reading, accepted as desired skills in any kind of content material, (1) stimulation to both self-expression through activity and questions for further research; (2) use of experiential knowledge to illustrate a specific idea; (3) use of experiential knowledge to illustrate a generalization.

To measure free associational reading in these three phases it was necessary to build an original test. The test was administered to 243 seventh grade pupils, 106 in one system, and 137 in another. All evidence pointed to the fact that both systems used teaching methods which were comparable. Both groups of pupils represented a

wide range of socio-economic background and normal distribution of intelligence. Chronological age distribution was comparatively the same in both groups.

Preliminary examination of test results indicated that pupils showed little ability to do some phases of this free associational reading. Therefore, a teaching-learning cycle planned by the writer was used with a class of 35 pupils who served as the experimental group; they are herein referred to as Experimental. The remaining pupils in this particular system, 71 in number, were not given any instruction in free associational reading; they are herein referred to as Control A. At the close of a ten-week period all 106 pupils were again given the original test.

Conclusions

1. Pupils are able to improve their ability to suggest activities related to reading. The gains made by the experimental group were significantly superior to those made by the control group. Initial test scores were low, indicating little power in this skill. The instructionsl material appears to be effective in improving their ability.

2. Pupils made greater gains in suggesting activities classified as "Creative" than they did in the "Manipulative" and "Intellectual" categories. The

experimental group gained more than did the control group in all three types of responses, but only in the "Creative" responses was the difference statistically significant.

3. The correlation between intelligence quotient and ability to suggest activities related to reading was positive but low. This suggests that this phase of associational reading may be taught to all pupils with some degree of success, and that the ability depends more upon specific training than upon mental ability.

4. There were no significant sex differences in initial or final test scores measuring the ability to suggest activities related to reading.

5. Pupils are able to improve their ability to raise questions for further research related to their reading. Statistically significant differences were found between the gains made by the experimental and control groups. Initial test scores were fairly good for both groups, indicating that the seventh grader has some power in this skill. It is evident from this study that he can develop greater ability by specific teaching.

6. Questions described as "Clarifying" were a little less frequent in final tests than in initial tests. Some gain in the number of "thought-provoking" questions was made after the experimental teaching, but the increase was not statistically significant.

7. The correlation between intelligence quotient and ability to suggest questions for further research was low.

8. There were no significant sex differences in the retest scores measuring the ability to suggest questions for further research related to reading.

9. Seventh grade pupils are able to use experiential knowledge for illustration of a specific idea presented in their reading. Concentrated teaching produced only slight gains in this ability.

10. Some gain in the number of superior illustrations of a specific idea was made after the experimental teaching, but the increase was not significant. Illustrations classified as "Incompatible" showed gain, rather than the desired loss, after the experimental teaching.

11. The correlation between intelligence quotient and ability to use experiential knowledge for illustration of specific ideas presented in reading was positive but low. This suggests that this phase of associational reading may be taught to all pupils with some degree of success, and that the ability depends more upon specific training than upon mental ability.

12. There were no significant sex differences in the ability to use experiential knowledge for illustration of specific ideas presented in reading.

13. Seventh grade pupils are not very able in use of experiential knowledge for illustration of generalizations presented in their reading. Concentrated teaching produced very slight gains in this ability.

14. Pupils made significant gain in the number of superior illustrations of a generalization after the experimental teaching. Illustrations classified as "Inadequate" showed gain, rather than the desired loss, after experimental teaching.

15. The correlation between intelligence quotient and ability to use experiential knowledge for illustration of generalization presented in reading was positive but low. This suggests that this phase of associational reading may be taught to all pupils with some degree of success, and that the ability depends more upon specific training than upon mental ability.

16. There were no significant sex differences in the ability to use experiential knowledge for illustration of generalizations presented in reading.

Problems for Further Research

From this investigation it may be assumed that these phases of associational reading are factors in the thought-study life of the seventh grader. Future research might well seek information concerning the following problems: (1) Are these phases of associational reading vital enough for further research? (2) Can this test of associational reading be standardized? (3) Can scoring standards more objective than these used in this investigation be developed? (4) What can be done to increase the effectiveness of the teaching-learning cycle? (5) How early can children be taught: (a) to associate activities with reading; (b) to associate questions with reading; (c) to use experiential knowledge to illustrate specific ideas presented in reading; and (d) to use experiential knowledge to illustrate generalizations presented in reading?

Implications for Curriculum Builders

Findings of this investigation indicate that incidental teaching of these associational reading skills does not guarantee effective use. Therefore, in the results of the study may be found implications for future emphasis in the program for teaching pupils how to read in the social studies fields.

(A) Suggestions for Activities.-- Interest in activity is recognized as an innate drive of every child,[1] and the recent popular interest in hobbies recognizes this same drive in adults. It seems logical, then, to anticipate that early training in this phase of associational reading may serve a two-fold purpose: (1) satisfaction for the child in physical and mental activity at the moment; and (2) a worthwhile avocation, or even a vocational guide for him in the future.

(B) Questions for Future Research.-- Critical questioning is recognized as a valuable mental function. Association of questioning with reading is recognized as a characteristic of the mature beginning reader.[2]

1/ W. Wrightstone, Appraisal of Newer Elementary School, Bureau of Publications, Teachers College, Columbia, 1938, page 125.

2/ Wm. S. Gray, Thirty Sixth Yearbook, National Society for the Study of Educ., Pub. Sch. Pub. Co., Bloomington, Ill. 1937, page 97.

Power in the use of this skill is basic to the development of that independent thought,[1] which makes for efficient participation in civic life[2] and contribution to economic and industrial progress.[3] It seems logical to expect, then, that early training in this phase of associational reading also may serve both child and adult needs.

In the light of the foregoing, it may be assumed that specific provision should be made in the curriculum for teaching these reading skills. The seventh graders used in the experiment made significant gain in response after directed teaching. This would seem to indicate that associating activities and questions with reading is not too difficult for them. As is true of many basic reading skills, it is quite possible that these skills may be introduced on the lower elementary school level, and may be developed with increasing maturity of response through the secondary school grades.

1/ Charles A. Beard, A Charter for the Social Sciences, Part I, Chas. Scribner's Sons, New York, 1934, pp. 109-110.
2/ Ibid.
3/ Ibid.

(C) Illustrating a Specific Idea.-- Use of experiential knowledge to illustrate specific ideas presented in social studies reading is a basic ability for self-reliant and analytical thinking.[1] It is stated that the child thinks critically from the time he begins to solve any problems at all.[2] All reading demands this type of thinking, the reading situation itself being the stimulus. Experiential knowledge becomes more meaningful and permanent when applied in a new situation. Early training in this phase of associational reading would seem to meet both child and adult needs.

Thus it may be assumed that specific provision should be made in the curriculum for teaching this reading skill. The seventh graders used in the experiment made good pretest scores, but did not make a significant gain in power in the retest. This would seem to indicate that this reading skill is possible for the seventh grader to develop but that it presents a definite learning difficulty. It may be wise, therefore, to introduce this skill at the upper elementary level. Greater maturity in response could no doubt then be developed in the secondary school grades.

1/ Ruth Strang, Problems in the Improvement of Reading in High School and College, Science Press Printing Col, Lancaster, Pa., 1938, p 328.
2/ W. Wrightstone--Op. Cit.

(D) Illustrating a Generalization.-- Use of experiential knowledge to illustrate a generalization presented in social studies reading also is a basic ability for self-reliant and analytical thinking. However, it demands a keener discernment and evaluative power than illustration of a specific idea.[1] Early training in this phase of associational reading would seem to meet both child and adult needs.

In the light of the foregoing, specific provision should be made in the curriculum for teaching this reading skill. The seventh graders used in the experiment not only made poor pretest scores, but failed to show significant increase in power in the retest. This may indicate that this reading skill is too difficult for the seventh grader. It would be wise, then, either to present only simple generalizations familiar in content, or to postpone the introduction of this type of associational reading until a later grade. Increased maturity of response could then be developed in the secondary school.

1/ Charles A. Beard, A Charter for the Social Sciences, Part I, Chas. Scribner's Sons, New York, 1934 page 100

Summary.-- The findings of this investigation, then, present the following implications for curriculum builders: (1) association of activities and questions with reading of social studies materials may be introduced at the lower elementary level; (2) use of experiential knowledge to illustrate concrete specific ideas presented in reading may be introduced at the upper elementary level; and use of experiential knowledge to illustrate generalizations presented in social studies reading may best be introduced at the upper Junior High level.

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APPENDIX

TEST CONSTRUCTED BY THE WRITER

FOR USE IN

MEASURING ASSOCIATIONAL READING

IN THE SOCIAL STUDIES FIELDS

EXAMINER'S DIRECTIONS

1. Test booklets must not be opened. Pencils should be in the ledge.

2. Fill in complete heading on test cover, last name first, age in years only. Then place pencils in the ledge again.

3. Say, "This is a test of your skill in reading. During the test I will not be permitted to answer questions, so listen carefully now. As I read aloud, you read to yourself the directions on the cover of your test booklet."

4. Read orally with the children the directions "To the Pupil" on the cover of the test booklet.

5. Now say, "Turn to page 1 (9 or 17). It is a sample. Read it to yourselves as I read it aloud." Read orally the sample directions, sample story, and the exercise completed on page 2 (10 or 18). Then ask, "Are there any questions?"

6. After answering questions, say, "Remember, you may write as you read, you may have as much time as you need, and you must place your pencil in the ledge when you have finished this exercise. Then we will all turn to the next exercise together. Now take pencils, - ready, - turn."

7. When approximately 90% of the pupils have placed their pencils in the ledge say, "Stop."

8. At the end of the first and second exercises (fourth and fifth, seventh and eight) say, "Place all pencils in the ledge. There is another exercise on the next page. Do only that exercise, and place your pencil in the ledge when you have finished that one. Take pencils, - ready, - turn."

9. At the end of the third exercise (sixth, or ninth) merely say, "Place all pencils in the ledge," and collect the test booklets.

10. On the second and third days directions 2, 3, and 4 are to be omitted.

11. The test should be given on three consecutive days, Exercises I, II, and III the first day, IV, V, and VI the second, and VII, VIII, and IX the third.

RE-TEST IN ASSOCIATIONAL READING

Name_____ Date_____

School_____ City_____ State_____

Age last birthday_____ Grade_____

TO THE PUPIL

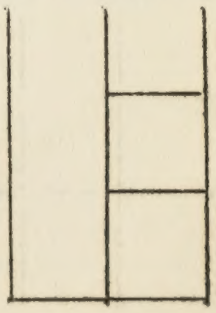
1. You will need sharp pencils and an eraser.
2. Read carefully.
3. Work as neatly and as thoughtfully as you can.
4. When the teacher says, "Take pencils," be ready to turn to the next page.
5. When the teacher says, "Turn," begin work immediately.
6. You may have as much time as you need.
7. You may write as you read if you wish.
8. Put your pencil in the ledge when you are through each exercise.
9 When the teacher says, "Stop," be sure your pencil is in the ledge.

Scoring Chart

Activities and topics
- -History
- -Geography
- -Current Events

Finding Illustrations
- -History
- -Georgraphy
- -Current Events

Applying Generalizations
- -History
- -Geography
- -Current Events



Totals



This page is done for you. It illustrates how to do Exercises I, II, and III.

FINDING ACTIVITIES AND TOPICS FOR FURTHER STUDY.

If your mind is alert you are a ' question box." Every story suggests questions to be answ ered, topics you want to study, activities that would be fun.

The next three exercises will show your skill in this kind of reading.

As you read the following story, think of questions about road building, topics for further study, activities you could do connected with this story. Write them in the proper spaces on the next page.

John McAdam, the Father of Our Roads Today

Shortly before 1800 A.D. an English engineer by the name of John McAdam began to work on the problem of roadbuilding. He experimented with a new kind of road. First he put in a deep stone base which was broad and curved high in the center so that the water could run off the sides. Then he rolled a layer of finer stone above the heavy stone and coated the top w ith a layer of very fine stone dust. This made a road that was better than any that had been built since Roman days.

McAdam went about over England building roads, putting down altogether about 1,000 miles. Soon engineers from other countries heard about him. They went to England to study his method, then went back to their homeland and copied it. Today, instead of stone dust, we use tar or some other good surface covering, but we still call these paved tar-surfaced roads "macadam" after this man, who is called the "father of the modern surfaced roadway."

-Man at Work: His Industries
Rugg, Krueger
Page 302

1. List all the questions or topics suggested to you by the story.

1. Kind of roads used in England before McAdam's road.
2. Reasons for needing the new road.
3. Results of the new road.
4. The great Persian highway.
5. Roman roads.
6. John McAdam's laboratory.
7. Improvements on McAdam's road.
8. Roads developed by German science of today.
9. How are American highways constructed today?

2. Make a list of things to do suggested by the story.

1. Build a miniature Macadam road.
2. Make a model of a Roman road.
3. Make a set of diagrams showing steps in making a macadam road.
4. Draw a highway map of England in 1800; another of England in 1939.
5. Visit a laboratory where road construction experiments are being made.
6. Make an excursion to a road now under construction.
7. Have a movie or slides on road building of the present, or the history of road building.
8. Write a narration about a young man who longed to help build his country's roads. McAdam's life.

<u>WAIT</u> until your teacher tells you to go on to the next page.

WAIT until your teacher tells you to go on to the next page.

Exercise I

DISCOVERING ACTIVITIES AND TOPICS FOR FURTHER STUDY

History

As you read this story think of questions to ask about pirates, topics for further study, and activities you could do in learning about these pirates. Write them in the correct places on the next page.

The Pirates

Because of the many sounds and bays off the coast, the southern colonies suffered most from pirates.

Probably many of us have enjoyed stories of pirates and buried treasures. How full they were of adventure, thrilling fights, and of strange fierce men! There were harbors hidden by trees, secret caves, treasure chests, and strange figures of other lands and other days. The stories make Captain Kidd, Henry Morgan, and Blackbeard fascinating rascals.

-----After reading the stories we should read some history. History tells us that there were such bold thieves and heartless murderers. Their captains were leaders, because they killed any one who dared to refuse to obey. Some of them fought for the love of it; all of them were ready to kill for gold. They were the gangsters of two hundred years ago.

-----For many years the pirates sailed from the Bahama Islands, near where Columbus first landed. When English warships drove them from there, they hid in the bays and channels of the coasts of Virginia and the Carolinas. Their stolen money bought food, medicine, tobacco, and powder in the colonies from Maine to Georgia. In many cases the governors protected them. They got so bold that warships had to be sent to capture them. Many were tried, found guilty, and hanged. Governor Spotswood, of Virginia, sent two ships to hunt down Blackbeard, the last of the pirate captains. He was killed, and his cutthroat crew were either killed in the battle or hanged.

There are many places from Maine to Florida where old tales tell that treasure chests are buried.

-When We Were Colonies
Knowlton and Gill
Pages 103-105

1. Write in this space the questions suggested to you by the story, questions to which you would like to know the answer.

2. List in this space activities suggested to you by the story. See how many different kinds you can think of.

WAIT until your teacher tells you to go on to the next page.

Exercise II

DISCOVERING ACTIVITIES AND TOPICS FOR FURTHER STUDY

Geography

Here is another paragraph to test your skill in thinking of things to do and topics to study. As you read this story, think of questions to ask, topics for further study, and activities you might do related to textile manufacturing. Write them on the next page.

Our Youngest Textile Industry

Cotton, wool, silk, and flax have long been the world's chief textile fibers. These four fibers have been known and used for hundreds and even thousands of years. There is now another textile fiber, so young that it is only a baby compared with the rest. This is rayon. Its manufacture has grown as fast as Jack's famous beanstalk. One firm in the United States made in a recent year more rayon yarn than was produced in the entire world twenty-five years before. The output of many other firms has grown in like proportion. Several times more rayon than silk is manufactured at present.

-The United States and Its Trade Relation
Sansen, Allen
Page 80

1. List here some topics you would like to explore, or some questions to answer, suggested to you by the story.

2. List here the activities suggested to you as you read. They should include many different kinds.

WAIT until your teacher tells you to go on to the next page.

Exercise III

DISCOVERING ACTIVITIES AND TOPICS FOR FUTURE STUDY

Current Events

Here is a third story. As you read it, think of new topics to read about, questions to answer, and activities to do related to our passenger airlines to Europe. Write on the next page.

YANKEE CLIPPER OFF ON FIRST PAY HOP

PORT WASHINGTON, N. Y., July 8 (AP)--Nineteen persons, first to make a commercial transatlantic flight over the so-called "Northern Route," left here today aboard Pan American Airways' giant flying boat Yankee Clipper.

Eleven of the passengers were newspaper, magazine, radio or news service executives.

The huge plane left the waters of Long Island Sound at 8:25 A.M. and headed for Southampton, England.

Providence Evening Bulletin
July 8, 1939

1. This story must have made you think of many related topics you want to look up. List here the questions and topics you thought of as you read.

2. Name the many activities suggested to you by the story. See how many different kinds you can name, but be sure they are associated with the story.

WAIT until your teacher tells you to go on to the next page.

This page is done for you. It illustrates how to do Exercises IV, V, and VI.

FINDING ILLUSTRATIONS

A good thinker illustrates many statements. Often he will say, "For instance,--" and continue with an illustration. He may even think ahead into the future and suggest something that may happen. Giving illustrations develops keen minds, produces alert readers.

The next three exercises will test your skill in finding illustrations of what you read.

As you read this story, keep your mind alert for other illustrations of communicating without speaking. Make a list of them in the proper spaces on the next page.

Sending Messages Face to Face

Have you ever thought of how many different ways there are today of sending messages to people? If you have, you might have said to yourself, "Sending messages depends upon whether you are near people or are far away." And that is very true.

When you are with people "face to face," as we say, you can speak words that they can hear. If they understand your language (English or French or German, or whatever it may be) they can understand what you are saying. We call this way of sending messages "communicating by spoken language."

Or you can even give someone a message without speaking. You can shake your head instead of saying "No," or nod it in place of saying "Yes." If people know each other very well, a smile or a frown can often tell what they mean. "I don't know" may be said by shrugging the shoulders. "Is that really true?" may be expressed by raising the eyebrows or otherwise making your face into a "questioning" expression. We call this way of sending messages--moving the head, arms, hands, fingers, or the face--" communicating by gestures."

Scientists think that long before men had a spoken language they communicated by gestures. You can make up an interesting game by seeing how many different ways you can send messages to people by using gestures.

-Man at Work: His Industries
Rugg, Krueger
Pages 398-399

In this space write illustrations to show other ways of communicating without speaking.

1. smoke signals
2. fire signals
3. drums
4. semaphore lights
5. semaphore flags
6. flashes of sunlight
7. whistle signals
8. hill signals
9. traffic lights
10. traffic policemen
11. elevator call bell
12. time clock
13. port and starboard lights on shipboard
14. head and tail lights on automobiles
15. lightships and lighthouses
16. bell buoys
17. fog horns
18. smoke writing
19. deaf-and-dumb language

<u>WAIT</u> until your teacher tells you to go on to the next page.

Exercise IV

FINDING ILLUSTRATIONS

History

Here is another paragraph. As you read this, try to find illustrations of "strategy" in home, in school, and many other places. Write the answers to the questions on the next page.

Using Strategy

Strategy is a word used to describe war movements. A general may use strategy to save his army from capture, or to force the enemy to surrender.

Sometimes strategy must be well-timed to be successful. Twice Hitler has timed his strategy carefully. He seized Austria at a moment when he knew other European countries were not ready for war. Then, too, he knew Great Britain could not give Europe her entire attention. She must protect not only her home land, but also her interests in the Mediterranean, in India, and China. Hitler knew it would be difficult for Britain to wage war in Europe, and at the same time have enough ships to protect all these other places. So by the use of strategy he timed his demands for Czechoslovakia well.

Geography often makes the use of strategy helpful. For instance, we are told how the Swiss people have saved their country with the aid of their mountains. One story relates of the Swiss being driven up the mountainside by their enemy. They climbed to a cliff where they could look down upon their foe. By hurling huge rocks downward they won the battle. The mountains had protected them from attack and also provided ammunition.

Climate also helps. One night during the Revolutionary War Washington's army was camped on Manhattan Island. He needed to escape an attack by the British. A dense fog rolled in from the Atlantic Ocean. Neither camp could see the other, so Washington led his forces away safely. When the fog lifted, the British found only the ashes of the rebel campfires. The fog had helped Washington retreat and so save his army.

In the use of strategy, understanding of other people helps a great deal. Washington expected the Hessians at Trenton had been celebrating Christmas Eve, and that their guards were sleepy. By attacking them at that time he surprised them and forced them to surrender.

Japan's recent activity in China is another illustration. China has been very backward. She has remained a very large country with many separate little areas. Some of these areas would not support the government. Now Japan wants to be the most important country in Asia. She looked with envy upon the rich oil fields of Manchuko which would increase her power. She used strategy to seize the oil fields for herself. Japan dared to do this because she understood that China was backward and was unable to fight as a united people,

1. In the space below each question give an illustration of how strategy could be used:

 a. In school

 b. In the home

 c. Among children at play

 d. By a lawyer in court

 e. By a politician

2. How did John Smith use strategy?

3. How did the Massachusetts Bay Colony use strategy in protecting its charter from seizure by the king?

4. How do nations today use strategy to get land they desire?

5. How has the United States used strategy to fight foreign broadcasts to South America?

6. Give any other illustrations of strategy you have thought of.

WAIT until your teacher tells you to go on to the next page.

Exercise V

FINDING ILLUSTRATIONS

Geography

Here is another chance to test yourself in giving illustration. This story illustrates some causes of forest fires. As you read the story try to think of illustrations of ways to prevent fires in the forest or in other places. Follow the directions on the next page.

Causes of Forest Fires

The industries that have ravaged our forest added to the fire menace in our forests. The dead branches left by lumbermen lay on the floors of the forests like so much kindling, waiting for a spark to set them off. When the spark was supplied by some careless hand, by lightning, or by a passing locomotive, the forest became a huge bonfire. In many cases of serious forest fire the evil started long before the spark was supplied. It started with the people who failed to clear the forest floors of dangerous tinder. Forest fires have been one of the chief means of wasting our forests.

Destructive fires still continue to ravage our remaining forest areas. Out of every hundred forest fires today ninety are caused by carelessness. About fifty thousand fires occur yearly in our country.

—"Social Studies," Book Three
Bruner, Smith
Page 345

1. Great care is taken to prevent destruction of forests by fire. In this space tell some ways not mentioned in the story that <u>forests</u> can be protected.

2. Illustrate some ways to prevent fires in <u>other</u> <u>places</u>.

<u>WAIT</u> until your teacher tells you to go on to the next page.

Exercise VI

Current Events

In this exercise again show your skill at giving illustrations. As you read, think of other ways in which science has helped mankind. Then follow the directions on the next page.

ROOSEVELT LAUDS WORK OF RESCUE

Washington, May 26,--(UP)--President Roosevelt today praised the Navy for its work in bringing to the surface survivors of the sunken submarine Squalus.

The Navy, he said, deserves very great credit for conducting the rescue operations under difficult and trying circumstances.

The President said that the success of the rescue devices used on the Squalus proved the worth of spending a great deal of money on experimental work.

-Providence Evening Bulletin
May 26, 1939

1. In this space list some illustrations of how science has helped mankind in the past.

2. In this space tell some ways you think science may help mankind in the future.

WAIT until your teacher tells you to go on to the next page.

This page is done for you. It illustrates how to do Exercises VII, VIII, and IX.

APPLYING GENERALIZATIONS

Sometimes a statement is made which can be illustrated with many examples. Such a statement is a generalization, because it is generally true.

This is the generalization: Both young and old need to have fun.

As you read think of illustrations which make this statement true. List them on the next page.

Recreation

Both young and old need to have fun. We must turn away from our work now and then to play. When play re-creates us, makes us over, it is called recreation. One of the great life insurance companies, because it wanted its policy holders to live long and be disabled as little as possible by sickness, published a bulletin on how to live happily to old age. One of the suggestions of this bulletin was to play games and seek other kinds of wholesome pleasure.

-America and the New Frontier
Freeland, Adams
Page 213

This is the generalization: Both young and old need to have fun.

List below the illustrations which make the generalization true.

1. People develop hobbies because they need recreation.
2. Thousands of people either play baseball or go to games.
3. Football is a fovorite sport of man and women, children and adults, players and audience.
4. Schools teach children games to play.
5. Playgrounds are provided by every good school.
6. Grown people have clubs for social purposes, like bridge.
7. Churches provide clubs for men, women, and children.
8. Scouting and "Y" clubs offer fun for children.
9. Camps, some hotels, hostelries, and trailercamps are successful because people seek fun.
10. Most people go to moving pictures for fun.
11. Trips to Bermuda and reduced train fares across the country offer people inexpensive vacations.

WAIT until your teacher tells you to go on to the next page.

Ecercise VII

APPLYING GENERALIZATIONS

History

Here is a generalization: Defeat can be made a step toward success.

Earning Success

We never can tell which is ahead of us, success or defeat. We do know that we all must meet defeat sometimes. We know also that much serious effort can lead from defeat to victory. We do know, however, that few people meet success unless they work hard.

You may remember in the Trojan War the Greeks struggled for nine years. Finally one clever Greek thought of making the great wooden horse. The strange animal was accepted inside the city walls as an offering. Then the Greek soldiers hidden within climbed out. Troy was captured; Greece had won the war through her persistent effort.

In their turn the Americans in the Revolutionary War met one defeat after another. Constantly George Washington and his army had to retreat so that they would not be forced to surrender. They were ragged and ill-fed. Finally a surprise attack on Trenton and Princeton gave them two victories. How quickly they forgot discouragement and thrilled to the cause of liberty!

Lincoln faced many a defeat. His family had no money. This was defeat at the very beginning, but Lincoln refused to give up his ambitions. He studied under great hardship; he worked hard and long for little money. Many times he lost his business, became penniless, and had to start all over again. When he had been a lawyer for some time, he debated with Stephen Douglas. Each man wanted to represent the state in Congress. Lincoln lost, but the debate made him famous. Two years later he became one of our most noted, one of our most revered presidents. He made his defeats serve as stepping-stones to success.

This is the generalization: Defeat can be made a step toward success.

In the space below illustrate this generalization with as many examples as you can. Try to make your illustrations very different from each other.

WAIT until your teacher tells you to go on to the next page.

Exercise VIII

APPLYING GENERALIZATIONS

Geography

This exercise again is to test your skill in illustrating a generalization.

This is the generalization: No worker today is as independent as in the early days of our country.

As you read the story, think of as many different illustrations as you can. List them on the next page.

Interdependence and Specialization of Modern Farmers

The modern farmer is no longer the independent agriculturist of earlier days. He does not produce all or even most of what he must have to supply all his needs. There are, of course, degrees of independence. Farmers in the United States grow more than 80 per cent of the vegetables which they eat. Vegetables are raised in sufficient quantities to permit the farmer's wife to feed her family well during the summer, and the surplus products are stored, dried or canned, and used in the winter season.

But there are farmers who raise few vegetables. Wheat farmers on the high plains may perhaps eat canned vegetables purchased at the store. An Illinois farmer may raise corn and hogs and buy his flour from the grocer. Oranges will be shipped into the apple country; wheat flour will be transported to cornmeal country; one farmer will devote himself entirely to the raising of chickens, while another will raise nothing but lettuce.

Farmers today are generally interdependent. They raise cash crops like wheat and corn and cotton and sell them in a world market. For most of the necessities of life they depend upon each other and on industry, transportation, and the market.

-Exploring Geography
Casner, Peattie
Page 213

This is the generalization: No worker today is as independent as in the early days of our country.
List your illustrations here.

WAIT until your teacher tells you to go on to the next page.

Exercise IX

APPLYING GENERALIZATIONS

Current Events

Here is third exercise to test your skill at proving generalizations.

This is the generalization: Conditions throughout the world are constantly changing. Therefore our books must be changed often.

As you read, think of as many examples as you can to illustrate this statement. Then follow the directions on the next page.

ILLINOIS CLAIMS LARGEST OIL POOL

By a Staff Correspondent of the Christian Science Monitor

CHICAGO— If anyone were to ask you the location of the largest oil pool in the world you would likely say either Oklahoma, southern California, or Texas. But according to the latest figures it's in Illinois.

The Lake-Centralia-Salem oil pool of Marion County has a daily production of over 140,000 barrels, which is some 1,500 barrels more than the next largest, the Longview pool in the east Texas field.

This refers to pools and not fields. Total Illinois daily production is about 265,693 barrels, while that of the east Texas field is 372,798. The point is that Illinois has within just the past year or two become one of the nation's leading oil producers.

-Christian Science Monitor
July, 1939

This is the generalization: Conditions throughout the world are constantly changing. Therefore our books must be changed often.

List your illustrations here.

INSTRUCTIONAL MATERIALS DEVISED BY THE WRITER

FOR USE IN THE

TEACHING-LEARNING CYCLE

Lesson I

DISCOVERING ACTIVITIES, QUESTIONS, AND TOPICS

Too many readers are satisfied just to read story and close the book at the end. A story is like the trunk of a tree. If you use your mind's eye you will see many, many branches from that main body, the story, stretching out in all directions. The branches represent the ideas that are suggested by the story, the thoughts that grow from it. All of the fun is not just in reading the story itself. Part of it is in doing the things the story suggests to us.

As you read this story think of questions you want answered, topics for further study, and activities you would have fun doing. Be sure they are all closely associated with the story. Then follow the directions on the next page.

Natural Resources of the United States

When the United States first became an independent country, it was not rich as it is today.----But as time went on, wealth increased and today this nation is loaning large sums to other nations. It is now looked upon as the wealthiest country in the world. We naturally wonder how all this has come about so rapidly. There have been two important factors in this progress: The people and the physical resources of the country.

No factor is of greater importance in the progress of a country than its climate. The torrid zone is too hot and the frigid zone is too cold for the normal development of industry. Desert areas are hostile to industry and regions of very heavy rainfall are often unhealthful. The climate of the United States varies greatly in different parts of the country.---- These diversities of rainfall and of temperature give diversity to plant and to animal life; occupations also vary greatly with variations in climatic conditions.

Industry requires both machines and workers and the

needs of each must be supplied. The workers must have their food and the machines their raw materials. A country like ours able to supply both from its own resources is industrially fortunate.

When a traveler crosses our country from east to west, he is impressed with its magnificent distances. From New York to San francisco the journey occupies about four days in an ordinary train. The distance is nearly 3200 miles, and from northern Minnesota to southern Louisiana it is nearly 1400 miles. This territory is more than three times the area which the country had at its beginning, and the population is more than thirty times the original.

The best commercial market in the world is western Europe, and the most densely settled art of our country faces that continent, is nearest to it, and is, therefore well located to share in its trade. Our Pacific coast faces Asia, and this gives us and advantage on the Pacific with its opportunities for expanding trade.

Harbors furnish safe anchorage for ships together with oppportunities for loading and unloading cargoes. Our coasts are well provided with harbors. The best are in the Northeast and are nearest to the important European markets. The few ports of the Pacific coast are commodious and highly important. The southern ports are somewhat shallower but are being artificially improved by dredging, by breakwaters, and by canals.

Our country possesses much fertile farm land which is remarkably free from rocky soil. Such land makes possible and extensive use of modern agricultural machinery which greatly increases the producing power of the American farmers.

Nations at Work

Packard-Sinett
p. 15 - p. 1
p. 17 - p. 2 -- p. 18
p. 18 - p. 2, p. 3, p. 4.
p. 19
p. 19 - p. entirely

1. From the list choose the activities most closely associated with the story. Write their letters on your paper.

 a. Find pictures to illustrate the variety of climate found throughout the United States during the month of January.

 b. Build a topography map of plastecene.

 c. Make a bar graph of our chief imports.

 d. Shade in a rainfall map.

 e. Tell the class about a plant that is grown in Kansas and one grown in Kentucky, explaining why each is grown in that area.

 f. Report on rice farming in the South.

 g. Describe winter sports in the Adirondacks.

 h. On a map show how the area of the United States grew as the years passed.

 i. Draw illustrations of some ships in our merchant marine.

 j. Make a picture map to illustrate the excellence of the location of the United States for trade.

 k. Make a study of harbors on the Atlantic and Pacific coasts.

 l. Draw a map showing the areas important for farming and mining.

2. Suggest activities suggested to you which were not in the list.

3. What questions occurred to you?

1. From the list choose the activities most closely associated with the story. Write basic letters on your paper.

a. Find pictures to illustrate the variety of climate found throughout the United States during the month of January.

b. Build a topography map of plateaus.

c. Make a bar graph of our chief imports.

d. Shade in a rainfall map.

e. Tell the class about a plant that is grown in Kansas and one grown in Kentucky, explaining why each is grown in that area.

f. Report on rice farming in the South.

g. Describe winter sports in the Adirondacks.

h. On a map show how the area of the United States grew as the years passed.

i. Draw illustrations of some ships in our merchant marine.

j. Make a picture map to illustrate the excellence of the location of the United States for trade.

k. Make a study of harbors on the Atlantic and Pacific coasts.

l. Draw a map showing the areas important for farming and mining.

2. Suggest activities suggested to you which were not in the list.

3. What questions occurred to you?

Lesson II

DISCOVERING, ACTIVITIES, QUESTIONS, and TOPICS

If you are an alert thinker you are constantly asking questions. Any story suggests to you many questions that would be fun to answer, topics to study, and activities that would be fun to do. As you read this story, think of these three things. Then follow the directions on the next page.

Kinds of Wheat

The two kinds of wheat most commonly referred to are the spring and winter types. Spring wheat is sown in the spring and harvested in the late summer. Winter wheat is sown in the fall, makes a good start before cold weather, comes, lies dormant in winter, and is harvested in late spring or early summer. Sometimes, when there is little snow and the ground freezes and thaws many times, the roots of the small plants are broken apart and the plant is killed. If winter killing occurs, the farmer can still sow spring wheat and thus save his season's crop. In the areas where the winters are severe, as in Minnesota, the Dakotas, and western Canada, the spring variety is raised, and in the central and southern part of the Wheat Belt the winter variety predominates.

Wheat is also classed as hard and soft. The spring wheats of the drier regions are generally hard and are especially valuable for bread making. Most of the winter wheats are soft. These are useful for flour for making pastries and for mixing with flour made from the harder varieties for various uses.

Durum wheats are drought-resisting kinds which have been intreduced from other countries where the wheats have become accustomed to dry conditions. These drought-resisting varieties are now being successfully cultivated on many parts of our Great Plains where the annual rainfall is from 15 to 20 inches, an amount too small for ordinary agriculture.

Other varieties possessing desirable qualities are being developed by plant-breeding processes. These, like the durums, are improving the quality and increasing the quantity of wheat produced.

1. List three questions suggested to you by the story.

2. From the list below select the questions that seem most closely related to the story. Write their letters on your paper and star the best ones.

 a. Why does spring wheat grow best during the summer?

 b. Why does winter wheat grow well if planted in the fall?

 c. Why is wheat so important a grain?

 d. What states raise winter wheat?

 e. Why does hard wheat serve for bread flour?

 f. In the southern part of the Wheat Belt a farmer can raise both summer and winter wheat. Does this affect the population? How?

 g. Where did "durum wheat" receive that name?

 h. How does Washington rank as a wheat state?

 i. What are "plant-breeding processes"?

 j. What other countries raise wheat in great quantities?

 k. Where is the corn belt?

 l. How dies freezing of the ground break roots apart?

 m. Does Canada grow all kinds of wheat?

 n. What are grain elevators?

 o. How did the colonists grow grain?

3. What activities were suggested to you?

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a. Why does spring wheat grow best during the summer?

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n. What are grain elevators?

o. How do the colonists grow grain?

3. What activities were suggested to you?

Lesson III

Discovering Activities and Topics

Today's story is about the trade routes used by Europeans in trading with the East. As you read think of activities that would be fun to do, topics which you would like to study, and questions raised in your mind while reading.

You may write them on the next page as you read or afterwards.

Trade Routes to Indies Long and Dangerous

The way of the eastern trade was long and difficult. Some wares came from the Indies even the mountains and deserts of Asia, across the Black and Caspian seas to Constantinople, the chief European gate-way to the East. Some eastern goods came by way of the Indian Ocean and the Red Sea to Egypt, across Egypt and down the Nile to the port of Alexandria. A third route led partly across the Indian Ocean and the Persian Gulf, then overland to Antioch on the coast of Asia Miner. From Antioch, Alexandria, and Constantinople, Mediterranean ships carried the goods westward.

The eastern trade was filled with dangers. Many a caravan bearing wares across the desert was attacked by

robbers. In the mountain passes of the East, plunderers often waylaid trains of pack animals. On the eastern seas and on the Mediterranean many a ship was captured by pirates.

But difficult and dangerous as all these routes were, the trade with the East was profitable and the Mediterranean was lively with the sails of many trading ships.

America In The Making
Chadsey, Weinberg, Miller
Pages 15 - 16

Lesson III (continued)

1. From the list below select the activities most closely associated with the story. Write their letters on your paper.

a. Construct a medieval trading ship.
b. Write an autobiography imagining yourself to be in a caravan attacked by robbers.
c. Show on a map the three chief routes of medieval trade between Europe and the East.
d. Draw an illustration of a modern ship of commerce.
e. Find some pictures to show modes of transporting goods in those days.
f. Write a description of the harbor of Venice.
g. Make a political map of medieval Europe.
h. Find out what experience the United States has had with pirates.
i. Arrange a display showing the wares carried to Venice and Genoa from the East.
j. Make a cartoon illustrating the following statement: Constantinople is the gateway to the treasure house of Asia.
k. Show on a map the modern trade routes between western Europe and the Far East.
l. Sketch a battle between a trading ship and a pirate ship.
m. Compare the size of the merchant marines of five modern world powers.
n. Read a story about pirates in the Mediterranean.
o. Tell the story of Prince Henry of Portugal.
p. Find out how the pirates were driven out of the Mediterranean.
q. Report to the class on Columbus' discovery of America.
r. With others dramatize a Turkish robber band's attack on a caravan.

2. What questions did you think of?

Lesson III (continued)

1. From the list below select the activities most closely associated with the story. Write their letters on your paper.

a. Conducted a medieval trading ship.
b. Wrote an autobiography tempting yourself to be in a caravan attacked by robbers.
c. Drew on a map the three chief routes of medieval trade between Europe and the East.
d. Drew an illustration of a modern ship of commerce.
e. Find some pictures to show modes of transporting goods in those days.
f. Write a description of the harbor of Venice.
g. Make a political map of medieval Europe.
h. Find out what experience the United States has had with pirates.
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p. Find out how the pirates were driven out of the Mediterranean.
q. Report to the class on Columbus' discovery of America.
r. With others dramatize a Turkish robber band's attack on a caravan.

2. What questions did you think of?

Lesson IV

Discovering Activities and Topics

As you read today's story think of activities questions, and topics about the development of printing.

The Development of Printing

Perhaps as important as any other single thing in bringing about the great changes that marked the beginning of modern history was the development of the art of printing. In ancient times and throughout the Middle Ages, books were written by hand. There were few of them and they were very expensive. Furthermore, only a small number of people could either read or write. At some time between 1420 and 1440, printing from movable type was either invented in western Europe or learned from the Chinese who had known about it for several centuries. In any case, the printing press then began to do its great work in Europe. Books could now be produced much more cheaply than formerly, and more people learned how to read and write. Knowledge could be spread much more rapidly and with much greater certainty.

History of the American People
Beard and Bagley
Pages 10 - 11

Lesson IV

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questions, and topics about the development of printing.

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History of the American People
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Pages 10 - 11

Lesson IV (continued)

1. From the list below select the activities that most closely are associated with the story. Write their letters on your paper.

 a. Find out what percentage of Providence population reads the newspapers published in Providence.
 b. With others dramatize the story of inventing movable type.
 c. Draw an illustration of how books were written by hand.
 d. Discuss the great changes brought about by the development of printing.
 e. Make a diagram of a lonotype machine.
 f. Trace the development of written language from earliest times to the Middle Ages.
 g. Construct a plastecene model of the first printing press.
 h. Study how a newspaper staff is organized.
 i. Compare prices of books in the Middle Ages with those of modern times.
 j. Write a biographical sketch of a famous newspaper editor.
 k. Ask for a public library display on the development of printing.
 l. Visit a modern printing plant.
 m. Organize a weekly newspaper and d o your own printing.
 n. Study and report on the way color plates are made.

2. What questions did you think of?

Lesson V

As you read today's story, think of activities, questions, and topics about ice skating. Then follow the directions below.

City Will Build Lake for Skating

A lake which will provide a skating place for Davis park is being built on the Chalkstone avenue side and the area will be flooded as soon as a 25-foot dam is completed. Turf is being stripped off and excavating to give the pond a depth sufficient to provide skating without danger, is going on.

The brook which flows through the park has been augmented by a stream from a spring behind the new Mount Pleasant High School which, at present, is flowing at a rate of 2,000,000 gallons of water daily.

-Providence Evening Bulletin

1. From the list below select the activities most closely associated with the story. Write their letters on your paper.

1. a. Draw a diagram to show how the source of water supply will be connected with the pond.
 b. Report on the method by which Providence obtains its water supply.
 c. Make a poster to advertize the new skating pond.
 d. Write a letter to the Park Commission expressing your appreciation of the new skating rink.
 e. Find out who holds the Olympic championship for skating.
 f. On a map of the United States locate the pleasure resorts that offer ice skating.
 g. Make a poster illustrating reasons why ice skating is good for one.
 h. Map the city and show where tax-supported skating ponds are located.
 i. Chart the population of several large cities. Then chart the skating areas offered by each to its citizens, to show how Providence compares.
 j. Prepare a debate on this subject: Ice skating should

replace roller skating in the winter.

k. Draw a sketch of ice skating in Holland.

l. Write a narration about an ice skating contest.

2. What questions did you think of?

ACTIVITY SUGGESTIONS

I. English

a. Composition
 1. Biography
 2. Autobiography
 3. Narration
 4. Letters
 5. Exposition
 6. Verse
 7. Description
 8. Dramatization
 9. Word study
 10. Games to play
 11. Debate

b. Reading
 1. Story books
 2. Biography
 3. Magazines
 4. Newspaper

c. Oral reading

d. Dramatization

II. Mathematics

a. Graph reading and making
b. Chart reading and making
c. Construction of problems

III. Geography and History

a. Reading story books
b. Current events study

III. Geography and History (continued)

c. Building time lines
d. Construction of charts and tables
e. See the following suggestions:

1. General
2. English
3. Mathematics
4. Art and Shop
5. Science
6. Home Economics
7. Music

IV. Science

a. Making experiments
b. See other suggestions

V. Art and Shop

a. Modeling in plastecene
b. Construction with paper, boxes, cardboard, etc.
c. Drawing
 Water Color
 Crayon
 Pencil
 Blackboard chalk
d. Making slides
e. Making movies
f. Making maps and diagrams
g. Drawing cartoons
h. Construction of pictorial charts

VI. Home Economics

a. Cooking
b. Sewing

III. Geography and History (continued)

c. Building time lines
d. Construction of charts and tables
e. See the following suggestions:

1. General
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a. Cooking
b. Sewing

III. Geography and History (continued)

c. Building time lines
d. Construction of charts and tables
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b. Construction with paper, boxes, cardboard, etc.
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Blackboard work
d. Making slides
e. Making movies
f. Making maps and diagrams
g. Drawing cartoons
h. Construction of pictorial charts

VI. Home Economics

a. Cooking
b. Sewing

VII. Music

a. Songs of other nations
b. Songs of the period being studied
c. Writing of songs

VIII. General

a. Reading and reporting on special topics
b. Making trips and excursions
c. Making scrapbooks
d. Seeing moving pictures
e. Developing hobbies
f. Having exhibitions
g. Giving assembly programs
h. Collecting and displaying pictures
i. Specialties, such as Hall of Fame

Lesson VII

Just reading a story is never enough for a thinker. A story is merely a pathway to unexplored ideas. If you think as you read, countless questions beg to be answered, or new topics to be studied. For instance, while reading a newspaper article on the present war in Europe, you might wonder what imports Germany is deprived of because of Great Britain's blockade. Or you might ask yourself what products Germany has been exporting during the past few years. Or you might decide to read on another topic- Interdependence of Great Britain and Germany. You can readily see that this thoughtful reading is very valuable; it is also interesting.

Today's exercise is for practice is just that kind of reading. As you read this story about uses of second-hand iron, think of questions, and topics for further study. Then follow the directions on the next page.

Iron Is Used Again and Again

Perhaps you have seen places called automobile burying grounds where lie heaped hundreds of worn-out machines. Looking at these ugly skeletons, you think of the tremendous waste the discarded machines represent. From most of them the high-priced metals, such as copper and aluminum, have been removed. Iron is the metal which is allowed to remain upon the junk heap. Even this iron waste is being collected now and reused.

Some industrial plants which need steel for the manufacture of their products operate entirely without using iron ore. Metal which has already been used is worked over and remanufactured into new articles. The steel of the framework of abandoned bridges, buildings and ships is kept in circulation by the scrap iron industry. Metal from the equipment of discontinued trolley lines may reappear in the vehicles of the bus lines by which they have been replaced. Large railway systems have mills where worn rails from main lines are

remade into lighter rails for branch lines. In every steel mill clippings accumulate. This scrap metal is remelted and fashioned into some standard product. In some manufacturing plants skilled workmen reroll worn-out rails into beds; in others, old locomotives and various kinds of scrap are used in the making of automobiles and steamships.

The use of scrap iron, whether it be worn-out rails, clippings from a steel mill, or scrap gathered by the farmer boy and sold to the junk dealer, explains why the manufacture of steel has been greater than the tons of iron ore mined.

- Exploring Geography
Casner, Peattie
Pages 114-115

Exercise VII (continued)

1. Write any questions and topics which the story suggested to you.

2. From this group of questions and topics select the ones most closely associated with the story. Write their letters on your paper.

 a. What does "working over" old iron mean?
 b. What happens to train schedules while rails are being repaired?
 c. Mining of coal.
 d. Does the New York, New Haven, and Hartford Railroad Company have a mill for repairing its rails? Where is it?
 e. Sawdust is scrap, like steel clippings. How is sawdust conserved and for what purpose?
 f. Standard iron and steel products.
 g. The Bessemer process for making steel.
 h.9 What are iron alloys?
 i. Other mineral resources of the United States.
 j. Use of scrap iron in automobiles
 k. Use of scrap iron in ships.
 l. What other metals are conserved in similar fashion?
 m. Why are skilled workmen so-called?
 n. What does this phrase mean: "refoll worn-out rails into beds?"

3. What activities does this story suggest?

Exercise VII (continued)

1. Write any questions and topics which the story suggested to you.

2. From this group of questions and topics select the ones that closely associated with the story. Write their letters on your paper.

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j. Use of scrap iron in automobiles
k. Use of scrap iron in ships.
l. What other metals are conserved in similar fashion?
m. Why are skilled workmen so-called?
n. What does this phrase mean: "relief worn-out rails introduced"

3. What activities does the story suggest?

Exercise VIII

Today's exercise includes both questions and topics and activities. The lists on the next page are quite incomplete. As you read about the seal fisheries in Alaska, think to some questions and activities of your own. You may write them in the top space on the next page as you think of them.

Seal Fisheries of Alaska

The Pribilof Islands off the coast of Alaska have long been famous for seals. Each summer large numbers of seals come to these islands, where the young seals are born. When the babies are strong enough, all the seals swim south into warmer waters. These seals are the kind that supply the sealskins used in making costly fur coats. Nearly a million dollars' worth of sealskins are obtained from the islands each year. The seals are under government protection, and only agents of the United States are now allowed to kill them.

*United States in the Modern World
McConnell
Page 94

Exercise VIII (continued)

1. Write in this space any questions and topics for further study which the story suggested to you.

2. Write in this space any activities which the story suggested to you.

3. From this list select the questions and topics most closely associated with the story. Write their letters on your paper.
 a. How did the United States acquire the Alaskan seal fisheries?
 b. How well populated is this area?
 c. Is this area near the new government settlement in Alaska?
 d. Markets for seal furs throughout the world.
 e. Salmon fishing in Alaska
 f. What fish are caught off the coast of New England?
 g. Why are sealskins so expensive?
 h. What laws are there to protect other kinds of fish?
 i. How does a zoo obtain a seal?

4. From this list select the activities most closely associated with the story. Write their letters on paper.
 a. Sketch the seal fishing area of Alaska.
 b. Draw and compare the fishing trawlers of 1850 and 1939.
 c. Map the United States shwoing where many kinds of fisheries are located.
 d. Make a pictograph comparing annual values of seal and other kinds of furs.
 e. Describe the process by which sealskins are made into garments.
 f. Have an exhibition of fishing tackle.
 g. Read a story about gold mining in Alaska.

Lesson IX

As you read this story try to think of questions, topics and activities about the establishment of representative government in America.

The Establishment of Representative Government
1619

Sir George Yeardley, a new governor, came to Virginia with a law which gave the colonists a representative form of government. The colonists were by this time scattered, to the number of four thousand, through eleven settlements called boroughs. Two representatives were selected from each borough. They met in Jamestown, July 30, 1619, and this House of Burgesses enacted laws for the colony. This was the first lawmaking body in America and was the beginning of popular, representative government.

-Standard History of America
Lawler
Page 63

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Standard History of America
Lawler
Page 83

Lesson IX (continued)

1. List the questions and topics which were suggested to you by the story.

2. From these questions select those most closely associated with the story. Circle their letters on this paper.

 a. How was the governor of Virginia Chosen?
 b. Why were the colonists given representative government at this time?
 c. Government of Virginia today
 d. What important events were happening in France at this time?
 e. First representative government in the world.
 f. When did England adopt representative government?
 g. Was England at war with anyone at this time?
 h. Why were the settlements called "boroughs"?
 i. Representative government in Warwick.
 j. Dictatorship in Italy.

3. List the activities which were suggested to you.

4. From these activities select those most closely associated with the story. Circle their letters on this paper.

 a. Read an account of the first meeting of the House of Burgesses.
 b. Imagine you are a member of the Virginia colony. Write a letter to your family in England describing the colonists' reception of the new government.
 c. Compare Virginia's present government with the first representative government.
 d. Dramatize some famous scenes which have taken place in the House of Burgesses.
 e. Draw a blackboard sketch of Governor Dale's arrival in Virginia.
 f. Make a scrapbook of current items illustratins representative government of today.
 g. Assemble a Hall of Fame of famous orators in American history.
 h. Show on a map the location of the first House of Burgesses and of Virginia's state house today.

Lesson X

Today's story is about the reasons why the first colonist came to America. As you read think of questions, topics, and activities to do associated with the story.

Motives Leading to Colonization

The London Company's first problem was to find settlers. The company merchants wished to establish a colony in the New World to which they might send their wares and from which they might secure the raw materials that were needed at home. They expected to pay the expenses of founding a colony and later to gain a large profit from this trade. The king was eager to have a share in that continent which had brought such wealth and political power to Spain, and believed that a colony would help establish unquestioned English ownership of North America. But neither of these motives was powerful enough to make people willing to leave their homes and brave the dangers and hardships of an unknown wilderness. To them the love of adventure and the desire for wealth were more powerful attractions. Strange and extravagant stories were told about this New World, and men believed that silver and gold and precious stones were to be had for the gathering. "Why man, all their dripping pans are pure gold, and all the prisoners they take are fettered in gold chains; and for rubies and diamonds they go forth on holidays and gather them by the seashore!" one account read. In England there was a great deal of poverty, even among the nobility; and the lure of wealth in America dazzled their eyes and led them on.

*The Nation's History
Leonard and Jacobs
Page 77

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"The Nation's History
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Page 77

Lesson X (continued)

1. Arrange these topics and questions in order so that the one most closely associated with the story comes first. The one not at all associated with the story will be the last in the list. Place a 1. on the left of the letter that comes first, a 2. on the left of the second, and so forth.

 a. What wares did the English merchants hope to send to the New World?
 b. Raw materials needed by England at this time.
 c. How does colonization lead to wealth and political power?
 d. How the new continent brought political power to Spain.
 e. What hardships did people foresee that made them reluctant to leave England?
 f. Other stories of fabulous wealth that attracted colonists to America.
 g. Kind of colonists who finally came to America.
 h. Captain John Smith.
 i. Why was there poverty among the English nobles?

2. Add here any other questions and topics you thought of.

3. Arrange these activities in order so that the one most closely associated with the story comes first. The one not at all associated with the story will be last. Write a 1. to the left of the letter of the first one, a 2. beside the one that comes second, and so forth.

 a. Draw a cartoon with which the London Company might have advertised the colony to Englishmen in England.

Lesson X (continued)

1. Arrange these books and questions in order so that the one most closely associated with the story comes first. The one not at all associated with the story will be the last in the list. Place a 1. on the left of the letter that comes first, a 2. on the left of the second, and so forth.

a. What were did the English merchants hope to send to the New World?
b. Raw materials needed by England at this time.
c. How does colonization lead to wealth and political power?
d. How the new continent brought political power to Spain.
e. What hardships did people foresee that made them reluctant to leave England?
f. Other stories of ~~re~~ glorious wealth that attracted colonists to America.
g. Kind of colonists who finally came to America.
h. Captain John Smith.
i. Why was there poverty among the English nobles?

2. Add here any other questions and topics you thought of.

3. Arrange these activities in order so that the one most closely associated with the story comes first. The one not at all associated with the story will be last. Write a 1. to the left of the letter of the first one, a 2. beside the one that comes second, and so forth.

a. Draw a cartoon with which the London Company might have advertised the colony to Englishmen in England.

b. Describe the transporting of riches from a Peruvian mine to its destination in Spain.
c. Build up arguments for a debate on this topic: Englishmen should colonize Virginia immediately.
d. Illustrate the advantages to be gained by king, company, and colonists, through colonization of America.
e. Make a map locating Jamestown.
f. Learn some songs sung by the sailors on those ships.

4. Add here any other activities suggested to you by the story.

Lesson XI

As you read these stories, try to think of questions, topics, and activities associated with the location of the dairying industry.

Important Dairying Regions

The most favorable conditions for dairying are: (1) a cool climate; (2) good pasture and hay lands; (3) proximity to grain supplies. A cool climate has generally been regarded as a first requisite for a good dairy region. It is interesting, however, to note that in very recent years cheese factories are being successfully operated in several of the Southern states in regions where good pasturage exists. This has been most often among the mountains. The unfavorable climate conditions in these localities have been partly overcome by refrigeration and the Pasteurization of milk. In 1929 more than 6,000,000 pounds of cheese were manufactured in the South.

- The Nations at Work
Packard, Sinott, Overton
Page 126

Principal Dairying Regions of the United States

Because of the density of population in southern New England and the Middle Atlantic States, this region is important in the production of milk. For many years New York was the leading dairy state, but now it ranks second to Wisconsin. The hilly topography, cool climate, and good grass of New England and the Middle Atlantic States are favorable to dairy farming, for cattle can graze on hills that are too steep to cultivate, and milk is more easily kept sweet and wholesome in a cool climate. All of our leading dairy states are in the North. The region of greatest density of dairy cattle is in Wisconsin, northern Illinois, and the adjacent states of Iowa and Minnesota. The United States as a whole has one dairy cow for every five persons, but Wisconsin has an average of one for each person in the state.

- Industrial Geography
Whitbeck
Page 130

1. Write here any questions and topics which the story suggested to you.

2. Arrange these topics in order so that those most closely associated with the story come first, and those not at all related are at the end. Place a 1 beside the letter that comes first, a 2 beside the one that comes second, and so forth.

a. Some centers of the dairying industry in the United States
b. Process of manufacturing cheese
c. What other commodities besides cheese and milk are products of the dairying industry?
d. Comparison of certain states in the dairying industry
e. Other discoveries of Pasteur
f. Which kinds of cows produce the best milk?
g. Who brought the first cows to America?
h. Process of Pasteurizing milk
i. Dairying in Rhode Island

3. Write here the activities which the story suggested to you.

4. Arrange these activities the same way you did the questions and topics in problem 2.

a. Draw a map to show grain and dairying areas of the United States.
b. Construct a pictograph illustrating growth of the dairying areas.
c. Tell how condensed and evaporated milk are different.
d. Chart the value of our dairying industry in a recent year compared with other leading countries.
e. Investigate how refrigerated products are shipped across the ocean.
f. Visit a model dairy.
g. Write to your state government for information on state inspection of milk.
h. Make a bar graph to show the five leading countries in exporting dairy products.
i. Perform an experiment or draw illustrations to show Pasteurization of milk.
j. Write a description of a dairying area.

Lesson XII

As you read of the perils of Columbus' journey, be thinking of questions, topics, and activities associated with the story.

Perils of Columbus' Journey

The first point reached was the Canary Islands, where they delayed three weeks for repairs. On the sixth of September they sailed directly westward, and the sailors were terrified as the land and known world disappeared, leaving only the unknown waste of waters around them. New terrors constantly arose. They feared they might meet the monsters which were said to inhabit these regions; they believed if the world were round they could not sail up its sides again. Columbus had to cheer their spirits, overcome their fears, and rule with a firm hand the crews, who might otherwise have seized the vessels and returned home. Day after day they sailed westward, borne onward by the trade wind. This constant easterly trade wind caused grave fears in the minds of the sailors, for they believed they could not return against it. They also noticed that the compass changed its direction to the west of the true north, which was to them another bad sign. They were disturbed by the flying fish, an entirely new sight to them. Fortunately after about four weeks they saw signs indicating that land must be near, and on the evening of October 11, 1492, a moving light was seen in the distance. On the following morning the welcome cry, "Land", arose. A new world had been discovered, although no one at the time realized it.

- Standard History of America
Lawler
Page 18

Lesson XII (continued)

1. Write, in the spaces provided below, the questions or topics suggested to you by the following phrases from the story:

 a. Canary Islands

 b. Sailors were terrified

 c. Cheer their spirits

 d. Rule with firm hand

 e. Flying fish

 f. Signs indicating land must be near

2. Add here any other questions and topics you thought of.

3. Write, in the spaces provided below, the activities suggested to you by the following phrases from the story:

 a. Columbus' journey

 b. Canary Islands

 c. Seized the vessels

 d. Sailors were terrified

 e. True north

 f. Flying fish

 g. Welcome cry "Land"

 h. New terrors constantly arose

4. Add here any other activities you thought of.

Lesson XIII

Here is a story about a new tin mine that is being opened in Bolivia. As you read it think of questions, topics, and activities associated with the story.

Tin

President Busch of Bolivia is beginning to export tin from his country. He and his nation are expected to get rich quickly. The deposits of tin have been only partly used, and tin is a principal export of Bolivia. It is a very necessary metal to all nations, and the world has relatively few mines of commercial importance. Some deposits, which have been worked since the first trading between Britain and Phoenicia, are located in Cornwall, England; some are in the Dutch East Indies. In southeastern China, near British India, are mines not yet greatly used. Most important are the several deposits in Bolivia.

The United States is a great importer of tin. Therefore we shall probably have to pay high prices for whatever ingots of this metal we purchase from Bolivia. The entire world is searching for tin at the present time. Some New England people will wonder why tin is not extracted from the historic mine at Jackson, New Hampshire, by modern methods.

- Adapted from an editorial in the Providence Evening Bulletin selected from the Lowell Courier- Citizen

Lesson XIII (continued)

1. List, in the spaces provided below, the questions or topics suggested to you by the following phrases from the story:

 a. Beginning to export tin

 b. Get rich quickly

 c. Mines of commercial importance

 d. First trading between Bolivia and Phoenicia

 e. United States is a great importer of tin

 f. Have to pay high prices

2. Add here any other questions and topics suggested to you.

3. Write, in the spaces provided below, the activities suggested to you by the following phrases from the story:

 a. Principal export of Bolivia

 b. Very necessary metal

 c. Cornwall, Dutch East Indies, southern China, and Bolivia

 d. United States is a great importer of tin

 e. Historic tin mine at Jackson, New Hampshire

4. Add here any other activities you thought of.

Lesson XIV

This is a story that appeared in the Providence newspaper last spring. It is about Congress' plan to provide money so that Admiral Byrd might explore Antarctica for the United States government. As you read, think of questions, topics, and activities that are associated with this story.

Group Approves Polar Expedition

Washington, June 3- Racing to forestall other nations, the United States will rush a million dollar expedition to the Antarctic to claim land discovered by intrepid American explorers. A bill providing $34,000 for this purpose will be passed by Congress early next week if the plan succeeds.

The expedition will be headed by Admiral Richard E. Byrd. His explorations in the wastelands near the south pole gives the American government its best claim to a huge continent.

Government officials informed the House body that other foreign nations are laying claims to lands in the Antarctic. They may start expeditions at any time to confirm their claims. Great Britain, Germany, and other nations have claimed lands there. Some of the claims are based merely on airplane flights. Officials urged haste in passing this bill to appropriate money so that the United States may reach the goal first.

- Adapted from a news article in
Providence Evening Bulletin
June 3, 1939

1. Write, in the spaces provided below, the questions and topics suggested to you by these phrases from the story:

 a. Plan approved by Congress

 b. Admiral Byrd

 c. Wastelands near the south pole

 d. Other foreign nations

 e. Alaska was regarded as worthless

2. Add here any other questions and topics you thought of.

3. Write, in the spaces provided below, the activities suggested to you by these phrases from the story.

 a. Admiral Byrd

 b. Private explorations

 c. Huge continent

 d. Laying claims

 e. Antarctic

 f. Airplane flights

 g. Huge deposits of coal underlie Antarctic wastelands

4. Add here any other activities you thought of.

Lesson XV

Giving Illustrations

Sometimes it is difficult to make an idea clear enough for another person to understand. One way that anyone can explain such a vague idea is to give an illustration, or example. He generally precedes his example with, "For instance," and then continues with his illustration. If this is done in conversation, very often the listener replies, "Oh, I know of an instance just like that." Then he uses his experience or knowledge to illustrate the point just given, but both have the same basic idea.

Two seamstresses may make dresses out of different cloth. However, if they both use the same pattern, the dresses will have similar lines.

Two authors often write on the same topic. Each has his own style of writing; each draws upon his own experience and knowledge to develop his story. But because the topic of the two stories is the same, the basic idea of both is identical.

An illustrator for a story may use pen and ink to show in picture form what the author has said in words. Thus two methods are used to give the reader the same picture.

A good thinker constantly illustrates his reading in this way. As the author presents an illustration, the reader stops and thinks of some illustrations of his own, but the idea he is illustrating is the same as that of the author.

Today you are beginning a unit designed to help you how to do this kind of reading. The directions on the next page will help you. Read them now and follow them.

Lesson XV

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Today you are beginning a unit designed to help you how to do this kind of reading. The directions on the next page will help you. Read them now and follow them.

Lesson XV (continued)

1. Reread the story, looking for the most important, or key, idea. Write it in this space.

2. In the story find three examples of this key idea. Write them in this space.

3. The key idea is: Different people may obtain the same results although they use different methods.

In the left-hand column are topics. Read them through. In the right-hand column are illustrations of those topics. Beside the illustrations that belong with topic (a) write an a. Beside the illustrations that belong to topic (b) write a b, and so on.

Here is an example showing how to do this exercise.

(a) Making pencils — a Using wood; Using brick; a Using metal

(a) Constructing a house	Nailing lumber
(b) Building a fire	Mixing milk with prepared powder
(c) Making a cake	Rubbing two sticks together
(d) Constructing a bookcase	Cementing bricks
(e) Manufacturing socks	Knitting yarn by hand
	Laying wood on top of paper and using a match
	Mixing eggs, milk, flour, shortening, baking powder, and flavoring
	Reading a plan from "The Boy Mechanic"
	Making the design with your mechanical drawing knowledge
	Weaving silk by machine

4. In this space write two original illustrations of the key idea of the story.

Lesson XV (continued)

1. Reread the story, looking for the most important, or key, idea. Write it in this space.

2. In the story find three examples of this key idea. Write them in this space.

3. The key idea is: Different people may obtain the same results although they use different methods.

In the left-hand column are topics. Read them through.
In the right-hand column are illustrations of those topics.
Beside the illustrations that belong with topic (a) write an a. Beside the illustrations that belong to topic (b) write a b, and so on.

Here is an example showing how to do this exercise.

(a) Making pencils — a Using wood; Using brick; a Using metal

(a) Constructing a house — Melting lumber
(b) Building a fire — Mixing milk with prepared powder
(c) Making a cake — Rubbing two sticks together
(d) Constructing a bookcase — Cementing bricks
(e) Manufacturing socks — Knitting yarn by hand; Laying wood on top of paper and using a match; Mixing eggs, milk, flour, shortening, baking powder, and flavoring; Reading a plan from "The Boy Mechanic"; Making the design with your mechanical drawing knowledge; Weaving silk by machine

4. In this space write two original illustrations of the key idea of the story.

Lesson XVI

Again we are learning how to associate original illustrations with our reading. Today's story tells about the way good soil in river valleys has always helped civilization to grow. As you read, try to think of illustrations of this key idea.

Importance of River Valley Soil to Civilization

Mankind first attained civilization in the rich soils of river valleys.---The land bordering the Ganges River in India was one of the earliest sites of civilization. Far off in the northwestern part of India, surrounded by the lofty Himalayas, is a famous fertile valley called the Vale of Kashmir. Once upon a time it is claimed by geologists, this oval-shaped area was the site of a lake, but its waters cut their way out through a gorge and left the lake bed of very rich soil. In this fertile region sheltered by mountain walls grow fruits and grains, and here are the homes of 3,000,000 people. These are examples of the importance of soil in the ancient world.

Soils are important in American history. Many of the first settlers sought out the fertile river valleys for the sites of their communities.---In Virginia, the first permanent English settlement in America was founded on the fertile banks of the James River. The valley of the Delaware, the valley of the Ohio, and many other river valleys because of their fertility have influenced the history of the United States.

- Exploring Geography
Casner, Peattie
Page 17

Lesson XVI (continued)

1. Reread the story, looking for the most important, or key, idea. Write it in this space.

2. In the story find three illustrations of this key idea. Write them in this space.

3. The key idea is: The fertile soil of river valleys has always helped civilization to develop.

In the left-hand column are topics. Read them through. In the right-hand column are illustrations of those topics. Beside the illustrations that belong with topic (a) write an a. Beside the illustrations that belong to topic (b) write a b, and so.

Here is an example showing how to do this exercise.

(a) Making pencils	a Using wood
	Using brick
	a Using metal

(a) On the east coast of the United States	Migration of the English westward from Massachusetts Bay Colony
(b) In the middle West	Settlement of Sacramento valley
(c) On the west coast	Dutch settlement on Manhattan Island in the Hudson River
(d) In Egypt	Intercolonial wars in the Ohio valley
(e) In Mesopotamia	Ancient civilization in the valley of the Nile
(f) In China	Babylonia in the Tigris-Euphrates valley
	Early development of the Hwang Ho valley
	Settlement of Willamette-Puget Sound

4. In this space write two original illustrations of the key idea of the story.

Lesson XVI (continued)

1. Reread the story, looking for the most important, or key, idea. Write it in this space.

2. In the story find three illustrations of this key idea. Write them in this space.

3. The key idea is: The fertile soil of river valleys has always helped civilization to develop.

In the left-hand column are topics. Read them through.
In the right-hand column are illustrations of those topics.
Beside the illustrations that belong with topic (a) write an a. Beside the illustrations that belong to topic (b) write a b, and so.

Here is an example showing how to do this exercise.

(a) Ticking ponchs
a Using wood
Using brick
a Using metal

(a) On the east coast of the United States
(b) In the middle "east
(c) On the west coast
(d) In Egypt
(e) In Mesopotamia
(f) In China

Migration of the English westward from Massachusetts Bay Colony
Settlement of Sacramento valley
Dutch settlement on Manhattan Island in the Hudson River
Intercolonial wars in the Ohio valley
Ancient civilization in the valley of the Nile
Babylonia in the Tigris-Euphrates valley
Early development of the Hwang Ho valley
Settlement of "Willamette-Puget Sound

4. In this space write two original illustrations of the key idea of the story.

Lesson XVII

Today's story tells about the difficulties faced by the colonists who settled the New World. As you read, think of illustrations to show that all the colonists had to meet and solve problems.

Difficulties of Colonizing

When the colonists came to America they were forced to meet many unexpected problems, even to facing death. However, because of their perseverance America prospered and grew.

"Up to 1540 the Spaniards failed to conquer north central Mexico, but after putting down a great Indian revolt the way was clear to advance northward. The discovery of rich mines brought on a great mining rush. District after district was explored, and miners and cattle ranchers in the course of fifty years occupied the north central and northwestern part of Mexico. They also planted a colony in New Mexico. Santa Fe became the capital of this most northern province of Spain in the New World.

"For a half century France was torn by wars between the Catholics and Huguenots. The Huguenot leaders planned a settlement in America. Their first attempt was in Brazil, but the colony was broken up by the Portuguese. A second attempt was made on the Carolina coast, but the settlers became discouraged and returned to France. In 1564 the Huguenots built a fort on St. John's River in Florida, but the following year this was destroyed by the Spaniards. This was the last French attempt at planting a colony until the religious wars were over.

"Sir Humphrey Gilbert obtained the right to explore and to plant settlements. He took possession of Newfoundland, but on the return voyage one of the vessels was wrecked and Gilbert was drowned. Sir Walter Raleigh, favorite of Queen Elizabeth, was granted the right to plant a settlement in Virginia, as the land north of the Spanish colonies was called by the English. Settlers were sent to Roanoke Island on the Carolina coast, but when a supply ship came the colonists had disappeared. Another group of settlers was sent to Roanoke Island, but a war with Spain came on and Raleigh was unable to aid his colonists. When a ship finally arrived only deserted ruins were found."

- Adapted from American History
Marshall
Pages 57, 61-62, 75

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- Adapted from American History
Lansdall
Pages 67, 81-82, 75

Lesson XVII (continued)

1. Reread the story, looking for the key idea. Write it in this space.

2. Find three illustrations of this key idea. Write them in this space.

3. The key idea is: Settlers had to solve unexpected problems in a colony in the New World.

 In the left-hand column are topics. Read them through.

 In the right-hand column are illustrations. Beside the illustrations that belong with topic (a) write an a. Beside the illustrations that belong with topic (b) write a b, and so on.

(a) New England	Unexpected cold
	Sioux and Apache Indian attacks
(b) Georgia	Great scarcity of food
	Pirate attacks on colonial trading
(c) Mid-western United States	ships
	Plans for a certain industry im-
(d) California	practical
	Difficulties of travel from set-
(e) Alaska	tled area to the colony
	Excessive cold
(f) The Carolinas	Distance from civilization
	Danger from lawless population
	Prairie fires
	Unsuitable form of government

4. In this space write two original illustrations of this key idea.

Lesson XVII (continued)

1. Reread the story, looking for the key idea. Write it in this space.

2. Find three illustrations of this key idea. Write them in this space.

3. The key idea is: Settlers had to solve unexpected problems in a colony in the New World.

In the left-hand column are topics. Read them through.

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	Plans for a certain industry im-
(d) California	practical
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(e) Alaska	tled area to the colony
	Excessive cold
(f) The Carolinas	Distance from civilization
	Danger from lawless population
	Prairie fires
	Unsuitable form of government

4. In this space write two original illustrations of this key idea.

Lesson XVIII

Today's story is about a Christmas party given by a Congressman to under-privileged children. As you read, think of illustrations to show how the less fortunate are given happiness by interested people.

Gerry To Fete 1500 Children

Fifteen hundred youngsters will have a lively Christmas when U. S. Senator Peter G. Gerry holds his 27th annual party Monday at 11 a.m. in Infantry Hall on South Main Street.

There will be a turkey dinner followed with ice cream and popcorn. Santa Claus will distribute mittens, games, and dolls. Tickets for the affair are being distributed by R. I. Society for the Prevention of Cruelty to Children, the police department, and St. Vincent de Paul Society. Music will be furnished by Fay's orchestra.

- Providence Evening Bulletin
December 20, 1939

Governor Vanderbilt's egg hunt for children at Easter, and Mr. Jesse Metcalf's sponsoring of the Providence Festival Chorus are two other illustrations of sharing pleasure. Most people enjoy giving happiness to those less fortunate than they. These philanthropic men use a means quite often employed by people in public service, or by those who are financially able. This is their way of spreading sunshine, and countless other ways are used by other people.

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Lesson XVIII (continued)

1. Reread the story, looking for the key idea. Write it in this space.

2. In the story find three illustrations of this key idea. Write them in this space.

3. The key idea is: People enjoy giving happiness to those less fortunate than they.

 In the left-hand column are topics. See how many of them you can illustrate independently. Write each illustration in the space below its topic.

 Now match the illustrations in the right-hand column with the proper topic by putting the correct letter to the left of the illustration, just as you have been doing.

(a) President Roosevelt	Singing Christmas carols in hospitals
(b) Boy Scouts in Providence	Taking gifts to hospitals
(c) American Legion	Repairing toys for Christmas gifts
(d) Firemen in Providence	Egg-rolling contest for children
(e) Providence Festival Chorus	Delivering toys for the Providence Journal Santa Claus

4. In this space write two original illustrations of this key idea.

Lesson XVIII (continued)

1. Reread the story, looking for the key idea. Write it in this space.

2. In the story find three illustrations of this key idea. Write them in this space.

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In the left-hand column are topics. See how many of them you can illustrate independently. Write each illustration in the space below its topic.

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(b) Boy Scouts in Providence — Taking gifts to hospitals

(c) American Legion — Repairing toys for Christmas gifts

(d) Firemen in Providence — Egg-rolling contest for children

(e) Providence Festival Chorus — Delivering toys for the Providence Journal Santa Claus

4. In this space write two original illustrations of this key idea.

Lesson XIX

This story tells how meat is preserved. As you read the story, think of illustrations to show how other foods are preserved.

Preservation of Meats

Refrigeration and rapid transportation.

These two modern developments have revolutionized the meat industry. In former years cattle had to be killed near where the meat was to be eaten. Unless it could be frozen and hung in a cold place during the winter, most of the meat had to be consumed immediately or else salted, pickled, smoked, or preserved in some other way. Today our meat is chilled and kept fresh and wholesome in cold-storage plants and carried in refrigerator cars and ships thousand of miles from the place where the animals were killed. These improvements have caused a great growth in the cattle industry and the sheep industry in countries like Argentina, Australia, and New Zealand, which are far removed from the great markets of the world.

Adapted from--The United States and
its Trade Relations
Janson, Allen
Page 40

1. In this space write the key idea.

2. In the story find three illustrations of the key idea. Write them here.

3. Here are three steps which will help you think of illustrations of any story. Today these steps are done for you. Study them carefully so you can do them yourself tomorrow.
Here are the steps:

1. Find words in the story that suggest illustrations.
From today's story these words should suggest illustrations:
refrigeration revolutionized the meat industry
rapid transportation revolutionized the meat industry
in former years
salted
pickled
smoked
Here are some suggestions based on these words:
Illustrate how refrigeration has revolutionized another industry besides meat-packing.
Illustrate how two other industries have been revolutionized by rapid transportation.
Illustrate to show that meat still is preserved by methods used in former days.
Illustrate the use of salting, pickling, and smoking with other foods besides meat.

2. Try to illustrate from the present, past, and future.
These suggestions explain this step:
Illustrate how people today preserve food without using ice.
Illustrate how the early colonists used the principle of refrigeration.
Illustrate how the American Indians preserved their food.
Illustrate how people in the Middle Ages preserved their food.
Illustrate how the ancient Orientals preserved their food.

3. Think how the key idea applies in various places,-your home, your city, your region, other regions, your country, other lands.
You can not always use all of these suggestions, but you can always use some of them.
These suggestions explain this step:
Illustrate how important refrigeration is in:
Warwick -can distribute fresh milk in summer
Providence
New England
Florida -can distribute fresh fruits to distant markets
Texas
Washington
Great Britain
Denmark -can export dairy products to Great Britain
Sweden
Switzerland
France
Argentina

You fill in the illustrations not completed throughout problem #3.

Lesson XIX (continued)

Lesson XX

This story is about uses of iron. As you read it, think of other illustrations to show how iron is used.

Uses of Iron, the Master Metal

Ever since the very early days of history iron has played an important part in the progress of the world. Today it plays a much more important part than ever before. Steel is made from iron, and we live in an "age of steel." Iron and steel have made it possible for people to harness power, build machinery of all kinds, make steel rails, and construct sturdy ships and fast trains. Power, machines, and transportation--all depend largely upon iron and steel. Furnaces, stoves, water pipes, and plumbing fixtures, made of iron and steel, help make our homes more comfortable. Iron and steel machines grind flour, saw lumber, mine minerals, can foods, spin cotton and wool, and weave threads into textiles. Automobiles, merry-go-rounds, radios, moving-picture machines, and many other things made wholly or partly of iron and steel add much to our recreation and amusement.

The United States in the Modern World
McConnell
Page 119

1. In this space write the key idea.

2. In the story find three illustrations of the key idea. Write them here.

3. The steps for finding illustrations are listed, but you are to follow them yourself today.
 1. Find words in the story that suggest illustrations. Write this in the left-hand column. In the right-hand column beside each group of words write the illustration they suggest. One is done for you.

a, power	a, in electric generator for lighting

 2. Illustrate from the present, past, and future. (Hunt for words to help you)

 Today

 Fifty years ago

 In colonial times

 In the Feuday Age

 In primitive times

 Fifty years from now

 3. Illustrate how the key idea applies in various places. (Where is iron used? What industries use it? Are there different uses in different places?)

 Warwick
 New England
 Pennsylvania
 The South
 Rocky Mountain Area
 Other countries

Lesson XXI

This story illustrates how work was divided in colonial times. Men did certain tasks, women did their own tasks. Even the children had definite work assigned them. As you read this story, think of illustrations of division of labor.

Division of Labor in Colonial Days

The one thing that the New World possessed in great abundance was fertile land. Food could be grown or domestic animals raised on it; fuel could be cut and frequently game could be shot on it. All these, however, required labor, and plenty of it.

No kind of work, therefore was so nearly univeesal as farm work. In New England every farmer had his live stock, which supplied him with milk and meat an gave the men and boys the morning and evening "chores", such as milking the cows and feeding all the animals. In the garden were grown the various vegetables, and these required planing, hoeing, and gathering. The fields were planted in wheat, corn, and rye, and these demanded attention.

----All the grain was cut by hand with a sicle or a scythe. When the grains of wheat or of rye were to be separated from the chaff, the stalks were thrown off the barn floor and besten by the farmer and his boys with wooden sticks, called "flails". This was slow, hard work.

----The house work for the large families of those days was in itself a huge task--the cooking, washing, ironing, and keeping the house in order. Upon the women and girls fell also the responsibility for making and mending all the clothing. ----Perhaps they halped also to weed the garden, to make the brooms, or to pick the feathers from the ducks or chickens that were to be eaten for the next meal. In the north the mother of the family and her daughters had to do all these things themselves, for help was scarce; in the South there were more servants,---but the women and girls had to see to it that the women's work was done.

The American People and Nation
Tryon and Lingley
Page 123-126

Lesson XXI

Lesson XX (continued)

1. In this space write the key idea.

2. In the story find three illustrations for the key idea. Write them here.

3. Write here your original illustrations. Use the three steps to help you. Also at the bottom of the page are suggestions, but only use them if you need to.

The steps: 1. Find suggestive words.
2. Use past, present, and future.
3. Think of different places.

Suggestions:
Colonial times- preparation of food, clothing, and home furnishings
Pioneers in the Mid-West
In the South today
In New England today
In other parts of the United States today
In other countries in earlier periods
In other countries today

Lesson XXII

Today turn to your "Activity Suggestions." As you read this story about colonial homes, think of activities to do, questions to ask, and topics for further study.

Country and Town Houses in Colonial Times

When the first settlers came, and when later colonists were settling new lands, of course they had to live in the roughest sort of shelter. Some of the earliest settlers in Pennsylvania took refuge under the foliage of large trees. In some parts of New England, New Netherland, and Pennsylvania they dug caves in the sides of steep banks. Most of the first houses on Manhatten Island, where New York now stands, were built of bark peeled from the trees.

A common home during colinial times was the log cabin. It has by no means disappeared even to this day. At first it was built of round logs notched at the ends to hold them together. There was no floor, no loft, no attic, and nothing to prevent the wind from whistling through the cracks. Sometimes the settler split some small logs, smoothered them with his axe, and made thick, rough boards called puncheons. With these he made a crude floor.--He fastened the shingles with wooden pegs.

Here and there a few cabins were more elaborate. When Oglethorpe founded his colony at Savannah, Georgia, he had all the cabins built alike, twenty-four feet long and sixteen feet wide. The sides were covered with clapboards, the roofs were shingled, and the floors were made of wide planks.--

Only the great estates in New York and the plantations of Maryland and Virginia could boast of mansions similar to those in England at that time.

Houses in the cities and towns were often larger and more elaborate than houses in the country and were built of a greater variety of materials. In Boston, for example, many of the houses were two or three stories tall, and a third of them were built entirely of brick.--Southern towns were few in number, and wood was the most common building material, although brick was much used in South Carolina.

The American People and Nation
Tryon and Lingley
Pages 109-111

1. List on the top of your paper the questions and topics suggested to you by the story. Be sure you find all the suggestive words.

2. List on the bottom half of your paper the activities suggested to you by the story. Make them appropriate and varied. Use your list of suggestions if you wish to.

Lesson XXIII

This story illustrates one type of W.P.A. work carried on by national and city governments. As you read, think of similar projects by which the government has both given work to people and served the public.

Warwick to Begin New W.P.A. Project

Work on drainage system gets under way tomorrow in Lakewood district

The City of Warwick in conjunction with the Federal Government will launch a new W.P.A. project in the Lakewood-Pawtuxet area tomorrow when work is to start on the installation of a storm sewer and local drainage system.

The project will provide work for more than 60 men for approximately three months.

Highway Commissioner Robert C. Barker said today that the new project is designed to eliminate surface as well as sub-surface water that becomes pocketed following a heavy rain in that area, causing damage by breaking up highways and flooding cellars.

Providence Evening Bulletin
January 2, 1940

1. On your paper write the key idea.

2. State the illustration given in the article.

3. Give you original illustrations. Remember the three steps:

 1. Find suggestive words.
 2. Use past, present, and future.
 3. Think of different places.

Try to find illustration without using the suggestions below.

Suggestions:

Past W.P.A. projects in Warwick
Projects now being conducted
Possible projects and future possibilities elsewhere
Other areas where drainage systems have been installed
Highways you have seen broken up by poor drainage
Drainage of ancient Rome

Lesson XXIV

As you read this story, think of other illustrations of manufacturing in the home.

Manufacturin in he home. Although it is customary in our time to call attention to the number of women and children employed in industries, it should be remembered that they have always done their full share of work. In colonial days they made at home practically all the coarse cloth with the aid of the spinning wheel and hand loom. Only the finer fabrics were imported.

-The History of the American People
Beard and Bagley
Page 124

Clothing, except that imported from Europe, was of homespun and deer-skin. Every house had a spinning wheel which was constant--ly in use, and tailors traveled from house to houre to make suits and dresses from homemade cloth. Many of the articles, like buttons ,and needles, now easily purchased in a small retail or chain store, were made in the home. Boots were made of cowhide. The wealthy colonists, however, were gorgeous in suits of silk and velvet, decorated with lace and gold. The wealthy social leader of those days wore shoes with large silver buckles, knee breeches, a tall beaver hat, and carried a gold-headed cane.

-Standard History of America
Lawler
Page 187

Manufacturing. In all of the colonies manufacturing was carried on on a small scale.--In the homes there was much spinning, dyeing, and weaving. In the colonies beer, cider, and rum were manufactured in large quantities. From England came the finer fabrics, most of the hardware, glass, paints, and paper; and the luxuries.

-American History
Marshall
Page 198

1. On your paper write the key idea of this group of stories.
2. Write illustrations found in the story.
3. Using the three steps, write some original illustrations.
 1. Find suggestive words.
 2. Think of illustrations from the present, past, and future.
 3. How does the key idea apply in ifferent places?

Suggestions:

In colonial New England	By Esquimo
In New England today	By Indians of Mexico
In pioneer days in the Middle West	By French people
In ancient Egypt	By the Japanese

Lesson XXV

As you read this story, think of other illustrations of the use of rivers for navigation.

Rivers carry traffic.--Rivers have been valuable since savage man first floated his log raft. Nor has modern man outgrown the river as a highway. In Europe the more navigable rivers are of great inportance. The Rhine is perhaps the most-used river in the European continent.--The Danube has 1,6000 miles of navigable waters.

The rivers of the more densely populated parts of Asia teem with life. The Jhelum River flows through the Vale of Kashmir, sunk deep in the Himalayas. The river is the highway that carries the freight for the 3,000,000 people living there. It even floats their homes, for many of them live in houseboats. In China the Si Kiang flows by Canton and at times seems fairly covered with boats. Then, too, there is the lonely river in the forest that carries the native canoe-- far into the wilderness.

-Adapted from Exploring Geography
Casner, Gabriel
Page 23

1. Write on your paper the key idea of the story.

2. Write two illustrations from the story.

3. To find your original illustrations use the three steps:
 1. Suggestive words
 2. Present, past, and future
 3. Different places

Tomorrow's exercise will have no suggestions. Work without them today if you can.

Suggestions:

During the colonixing period all along the Atlantic coast
During the period of westward expansion
During the current age
In England
In France
In Germany
In Africa
In China

Lesson XXVI

As you read this story about changes in the fishing industry, think of illustrations to show how other industries have changed. Perhaps you can even add other ways in which this industry has changed.

Fishing Has Been Revolutionized

Fishing is still carried on with hook and line, as it has been for centuries upon centuries, but this is largely for sport. All but a small fraction of the fish that are sold in quantities are caught in nets.----

The marketing methods of the fishing industry have also been modernized. For centuries there was practically no change in the methods of marketing fish. Fish were always dried and salted if they were to be shipped any great distance. Modern scientists have developed a process of quick freezing which does not damage the fish and makes it possible to keep this product for "out of season" use. Great quantities of mackerel are frozen, and in the winter when the mackerel have disappeared the fish are removed from the large freezer and marketed.----

These changes have caused a rapid growth in the fishing industry. At the Boston Fish Pier, the largest in the world devoted exclusively to the handling of fish, as much as 375,000,000 pounds of fish have been cared for in a single year. Today improved transportation and refrigeration facilities make it possible for fish to be shipped hundreds of miles into regions far from the sea, and yet be kept fresh. There is practically no limit to the area over which fish and seafood can be satisfactorily distributed.----

Although not much change has been made in the fishes, modern man engages in fish culture to bring about an increase in the amount of available fish. In the latter part of the nineteenth century, investigation in the United States showed that certain fishes has decreased, and activities to bring about an increase were taken.

- Exploring Georgraphy
Casner, Gabriel
Pages 85-86

1. Write on your paper the key idea.

2. Write illustrations given in the story.

3. In finding your own illustrations today your chief helping step will be to find key words. Use the other steps where you can. There are no suggestions given, so see what you can do independently.
 a. Illustrate other ways in which the fishing industry has changed.
 b. Illustrate how other industries have changed.

Lesson XXVII

Here are two stories about colonial life. As you read them, think of questions, topics, and activities associated with these stories.

Heating and Lighting the Home. Cooking.

The colonists heated their homes by burning logs in stone fireplaces which had outside chimneys such as they had known in Europe. As matches had not been invented, the colonists tried to keep their fires from going out each night by covering the live coals with ashes. To start a fire the colonists used flint and steel, or they had to borrow live coals from a neighbor. The fireplace served as a stove and oven. It also helped to light the house. Occasionally home-made candles were burned. In some homes lamps burning whale oil were used.

Paper dipped in fish oil served as windows, except in the homes of those who could afford to import clear glass, a new European luxury.

Transportation. Canoes, Ships, Pack Horses, Coaches.

The Indians, who traveled either by canoe or on foot along forest trails, knew the country well and thepaths they took pointed the way for the white men.

Many of the settlers who moved inland went afoot, following the Indian trails. Others followed the waterways in canoes, built in Indian fashion. The white men introduced into the New World travel the Old World sailboat, which sailed on the navigable rivers and along the coast. In overland travel the colonists introduced riding horses and pack horses.

After the colonists had widened the Indian trails into roads and had built bridges across the streams, stagecoaches came into use between the principal cities. One stagecoach, advertising itself as the "Flying Machine", boasted that it could cover the distance between New York and Philadelphia in two days. This was accomplished if the roads were not too muddy.

Within the cities wagons were drawn by oxen or by horses. The wealthier citizen rode in horse-drawn chaises or coaches.

- America in the Making
Chadsey, Weinberg, Miller
Pages 152-154(selected)

Today try to think of good, varied activities without using your list of suggested activities. Write both questions and topics, and activities in the usual places on your paper.

Lesson XXIII

This story illustrates how man has shortened commercial routes by building canals. These illustrations tell about canals which connect oceans. As you read, think of other illustrations of inter-ocean and inter-sea canals, and also examples of other important canals.

Another Inter-Ocean Canal Possible Across Isthmus

Plans for the Nicaraguan Canal have been revived. If they actually get to the digging stage, America will have achieved three out of four much-talked-of canals for linking the Atlantic and Pacific.

The four main canal routes which have been considered at various times by American engineers are:

First, the Panama route, now a 25-year-old reality.

Second, the route across southern Nicaragua, linking in the San Juan River and Lake Nicaragua. Planned as far back as 1825, this project is now being studied in conference by the Nicaraguan Government and itsneighbor Costa Rica. In the meanwhile American engineers are again at the task of surveying the ground problems.

Third, the route across the narrowest place of Mexico, the Isthmus of Tehuantepec. A canal at this point, so much nearer the United States than Panama, would bring Monolulu more than 1,200 miles closer to New York.

Fourth, a route farther south than any of there, across Colombia near its Panama border. This route actually was once dug-dug-and practically forgotten. It was America's first achievement in joining the oceans, undertaken with no thought of this significance, by a Spanish monk, Antonio Cereso, and Indian laborers in 1788.

-Adapted from New York Times, 1939

Using the three steps, illustrate:

1. Inter-ocean and inter-sea canals
2. Inland canals

Lesson XXIX

A generalizaton is a statement which can be illustrated with many, many examples. "Crops need moisture" is a generalization, because it is always true. Some plants can grow with very little moisture, but all vegetable life must have some moisture. Therefore any number of examples of this generalization can be given.

With the help of your teacher is discussion give illustrations of this generalization: Crops need moisture.

Here is a story with examples of a generalization. The generalization is: The spirit of adventure is necessary for world progress.

Adventurers Make for World Progress

A story is told about Alexander the Great of Greece which illustrates the daring spirit of this memorable character. While still a lad he one day watched a steward trying to tame a wild horse. The servant was most unsuccessful in his attempts. Taking the prancing steed by the bridle the boy turned him about and rode him across the field in the opposite direction. Alexander had discovered that the animal was afraid of his shadow. By turning him about, he had placed the shadow behind the horse, where it was out of sight. Only a daring lad would have under-taken to ride this steed.----A. G. Marden

Among Queen Elizabeth's subjects was a noblemen named Sir Humphrey Gilbert. He believed that England should have colonies in the New World and he planned to establish some settlements on the island of Newfoundland.

Gilbert's first expedition, in 1578, was a failure, for ocean storms and attacks by the Spaniards forced him to turn back to England without ever reaching the shores of the New World.

Five years later Gilbert commanded a second expedition of colonists. This time he reached Newfoundland, claimed it for England, and started out to explore the coasts farther south. His supplies soon ran short, however, and he set sail for home. On the way, his ship was wrecked, and he was drowned.--Early Days in America
Southworth and Southworth

The name of Jesse W. Lazear should be remembered and reversed, for he was one of our greatest heroes. He gave his life in the discovery of the cause of yellow fever. During the Spanish-American War hundreds of our boys died of yellow fever.---Thousands had succumbed to this dread disease yearly, and occassionally it had penetrated into our own United States, and had been known as far north as Philadelphia and Boston.--With our soldiers in Cuba and an epidemic of yellow fever, there was great need to study and check this disease. Under the direction of Dr. Walter Reed, Lazear and Dr. James Carroll volunteered, with a number of others, to be test cases. --All recovered but Lazear, who will always be remembered as a man who gave his life for his country, and indeed, for all mankind.--Adapted from America and the New Frontier
Freeland, Adams Pages 249-250

This is the generalization: The spirit of adventure is necessary for world pregress.

1. Re-read the story to find three examples of this generalization. Write them in this space.

2. Here is a group of illustrations. Some are examples of this generalization; some are not. Place a check to the left of the acceptable ones.

 a. Lindbergh's trans-Atlantic flight
 b. An operator of a loom in a cotton factory
 c. Donald MacKay, designer of the clipper-ship
 d. The crew of a clipper-ship
 e. A pony express rider
 f. A prairie mother of 1875
 g. Finnish ski-tropps

3. Now write some illustrations of your own in this space.

Lesson XXX

This is the generalization you will illustrate today: If a new home promises a higher standard of living, people will conquer hardship in order to live there.

With the help of your teacher name several illustrations of this generalization.

Here is a story with illustrations of this generalization. Read it, then do the exercise on the next page.

German Immigration

Scarcely had the high tide of Irish immigration passed, when a great host of Germans began to move westward across the Atlantic. For centuries Germany had been made up of a great number of small states, each with its own ruler and system of laws. Nearly all these states were monarchies, and the rights of the people were few indeed. For years the Germans had dreamed of uniting these governments, and winning a greater degree of liberty; and in 1848 they undertook to make their dream come true. But their revolution was a failure; and more than a million Germans decided to seek the freedom they had hoped for, in the land of the Stars and Stripes. In some cases, entire villages sold their property and undertook the journey across the sea.

-The Nation's History
Leonard, Jacobs
Page 529

The Troubles of the Colonists

The colonists soon found life in the New World very different from what they had expected. Many of them had heard strange tales of the gold and jewels which were everywhere in America, and they expected to return to England very wealthy. --Instead of gold and jewels they found forest trees to be cut down, houses to be built, fields to be cleared, and crops to be planted.---

And on this very first day, misfortune overtook the colonists, out of the forest crept a band of Indians armed with bows and arrows. Before the colonists succeeded in driving them away, two of the Englishmen had been wounded.

-Early Days in America
Southworth and Sountworth
Page 55

Hebrew Migrations

--The Hebrews, of Semitic stock, were at first a pastoral folk who wandered about, like other peoples in **Arabia**, seeking fresh pastures for their flocks and herds. Abraham led them-probably about the time of Hammurabi- from the Babylonian city of Ur to Canaan, which he looked upon as the "promised land." His descendants grew in numbers and formed the "twelve tribes of Israel." His grandson Jacob, or israel, led his

family and many other Hebrews to the Delta region of the Nile.

-Morey's Ancient Peoples
Edited by Countryman
Page 45

This is the generalization: If a newhome promises a higher standard of living, people will conquer hardship in order to live there.

1. Re-Read the story to find three examples of this generalization. Write them in this space.

2. Here is a group of illustrations. Some are examples of this generalization; some are not. Place a check to the left of the acceptable ones.

a. Pioneers who settled the Mid-West
b. Slaves coming to the South from Africa
c. Settlers of Boonesborough
d. French fur traders of the Ohio valley
e. Refugees from Arcadia
f. Italians in Ethiopia

3. Now write some illustrations of your own in this space.

Lesson XXXI

This is today's generalization: The enviroment of a region determines what the occupation there will be.

With the help of your teacher give just two illustrations of this generalization.

Where the World's Wheat Is Grown

Wheat is a hardy grain, growing as far north as 60 degrees north latitude. In India and Eghpt it is grown as a winter crop in the warmest part of the temperate zone. It also grows in parts of the torrid zone, but only at rather high altitudes, where the climate is cool. For example most of the wheat used in Mexico is grown on the central plateau at an elevation of about 7,000 feet.

The United States and Russia--grow the largest quantities of wheat of all the countries---. France, Hungary, and Italy are important wheat-raising countries; and Canada has become one of the three leading countries in the growing of this crop.

Wheat is at its best in the cooler part of the temperate zone. It is not a thirsty plant and requires less water than most of the cereals; it grows well on 30 inches of rain a year; in fact, a large proportion of the wheat of the world grows in regions of light rainfall-25 inches or less. The idoal climatic conditions are (1) a cool, wet spring, (2) a moderately dry summer, and (2) a sunny and rainless autumn.

Wheat will grow well in a variety of soils, but the rich, black, clay-loam soils are most favorable.

Industrial Geography
Whitbeck
Pages 52-53

Inportance of the Olive in Mediterranean Lands

Olive oil is the butter of the Mediterranean peoples and is of utmost importance in their diet. The olive tree is peculiarly the product of this region of dry summers. It has learned how to live and thrive in the rocky lands that inclose the Mediterranean. It cannot stand frost, but it can stand drought, and it livesand bears its fruit for hundreds of years.

Industrial Geography
Whitbeck
Pages 52-53

(See the next page)

The Lake Superior Iron Mines

The United States produces 40 per cent of the world's output of iron. Four-fifths of all the iron ore that we produce is obtained from deposits near the western end of Lake Superior because:(1) the ore in that region is close the surface and is easily mined; (2) there is an easy and cheap way to ship this ore to the coal fields where it can be smelted and made into iron and steel products; (3) the Lake Superior ores yield from 50 to 60 per cent of metallic iron.

The United States in theModern World
McConnell
Page 122

The generalization is: The enviroment of the region determines what the occupation there will be.

1. Re-read the story to find three illustrations of this generalization. Write them in this space.

2. Here is a group of illustrations. Some are examples of this generalization; some are not. Place a check to the left of the acceptable ones.

 a. Wheat raising the Nile valley
 b. Lumbering in Norway
 c. Cotton growing the South
 d. Gold-mining in South Africa
 e. Rubber producing in Brazil
 f. Cattle grazing in Argentina
 g. Manufacturing in Italy

3. Now write some illustrations of your own in this space.

Lesson XXXII

This is today's generalization: Man has learned mastery of his environment.

Irrigated Plantations on the Coast of Peru

Many of the people of Peru live in the highlands, where they produce scarcely enough food for their own simple needs; but along a part of the coast is a narrow strip of level lowland. Here sugar and cotton plantations, covering in all over 000,000 acres are maintained by irrigation from the mountain streams, for without irrigation the coastal region is a desert.

Land Transportation in the United States

If the land of the United States had been level, smooth, firm, and unforested, overland routes of transportation would have been established rather easily; but instead it was in many places hilly or mountainous, or try was forested.--The construction of good roads for wheeled vehicles required cutting away the forest trees, digging out the stumps, removing the bowlders or loose rocks, filling in the swampy stretches and grading the difficult slopes. It was a costly undertaking, and the early turn-pikes usually were built and managed by private companies or corporations, as railroads now are.--Industrial Geography Whitbeck Pages 312, 215, and 216

The Cloaca Maxima in Rome

During the period of the early Roman state, a great arched sewer, the Cloaca Maxima, was opened to drain the marshy lands about the forum; it emptied into the Tiber River. So well constructed was this drain that it is used today as one of the sweres of the city. It is vaulted in three rows of arches and is fourteen feet across inside.--Adapted from Morey's Ancient Peoples
Edited by Countryman
Page 321

This is the generalization: Man has learned mastery of his environment.

1. Re-read the story to find three illustrations of this generalization. Write them in this space.

2. Here is a group of illustrations. Some are examples of this generalization; some are not. Place a check to the left of the acceptable ones.

a. Building of Roosevelt Dam
b. Dredging New York harbor
c. Sending packages parcel post
d. Sanding streets covered with ice
e. Warning ships by means of lighthouses
f. Transporting by mail
g. Draining the Florida Everglades

3. Now write some original illustrations in this space.

Lesson XXXIII

This is today's generalization: Conservation is being used to maintain the reserve supply of many of our natural resources.

Conservation Aids

Denver, Jan. 8.-(INS)- Soil conservation that has helped farmers especially in the so-called Dust Bowl areas, has resulted in better land use and erosion control on 105,000,000 acres in 23 states, according to H. H. Finnell, director of Soil Conservation Service in this region.

-Providence Evening Bulletin
January 8, 1940

Water Power and Conservation

The important thing to remember in connection with the use of falling water for power is that in such use the water is not destroyed. Coal and petroleum, our two other chief sources of power, once used are gone forever. Therefore, wherever hydroelectric power is being used in place of steam-electric power made by burning coal or oil, an inexhaustible resource is being used in place of an exhaustible one. This is the best kind of conservation.

But when the development of water power means the destruction of beautiful waterfalls, there is good reason to think before acting.---Since there are many places in the world where hydroelectric power can be developed without spoiling the beauty of the scenery, we hope that it may never be necessary to sacrifice natural beauty to power development.

Fish Conservation

*---It is also necessary to see that life in the sea and rivers is protected. There are strict laws against catching all the salmon that swim up any stream to lay their eggs. Unless these laws are obeyed, the world will soon be without any salmon, which is one of the best food fishes. In Nova Scotia there is a limit to the period during which lobsters can be caught. In this way the people of Canada are preserving indefinitely their supply of lobsters. Just as in the case of the fur seal, it will be necessary to have international agreements to prevent the killing off of important types of food-producing fishes and the larger animals of the sea.

-The World at Work--Atwood
Pages 254 and 203
Published in 1931

This is the generalization: Conservation is being used to maintain the reserve supply of many of our natural resources.

1. Re-read the story to find three illustrations of this generalization. Write them in this space.

2. Here is a group of illustrations. Some are examples of this generalization; some are not. Place a check to the left of the acceptable ones.

 a. Invention of rayon
 b. Raising of fur-bearing animals
 c. Production of vegetable oils
 d. Utilization of sawdust
 e. Use of fertilizer
 f. Rotation of crops

3. Now write some original illustrations in this space.

Lesson XXXIV

This is today's generalization: Specialization in production leads to interdependence.

As you read the illustrations in the story, be thinking of some illustrations of your own.

Interdependence of Japan

Much more food is produced now than before the ports were opened. Then each locality had to produce everything that it needed. Today the region best adapted to the growth of a given crop will grow that crop and exchange it with other regions making a specialty of some other product. This specialization is possible today on account of improved methods of transportation. In this way danger from local famines has been greatly reduced.

Mulberry trees thrive in Japan; so food for the silkworm is abundant. Cheap labor is an important factor in this work. The worms must be carefully tended during their growing season, and women and girls can do this work well.---Large quantities of raw silk are needed in the Japanese factories, but much larger quantities are exported, especially to the United States. In some years such exports amount to more than $350,000,000 worth. This huge cash income to the Japanese silk growers is make possible through the great demand for raw silk in America.

Tea is another of Japan's cash crops, but one of much less importance than raw silk. The warm, moist climate is just suited to the growth of the tea plant.-- The countries of Asia, including China, Japan, the island of Taiwan, India, and the island of Ceylon, produce 99 per cent of all the tea used in the world.

This little island nation is one of the great fishing countries of the world. In addition to their use as food, fish are also used in the manufacture of fertilizers, thus increasing the producing power of the country. The Japanese fisheries have also become highly important in providing articles of export. Some of the best crabmeat upon the shelves of our stores comes from Japanese fishing grounds.

Japan has limited resources of iron ore, and the iron and steel industry is not highly developed. Shipbuilding, however, is very important and requires much steel. While Japan furnishes a good share of this, much of it is obtained from American and German mills.

Imports are large because of the great need of raw materials, and seventy percent of them are of this class. Among the leading imports are raw cotton, food products, iron and steel, machinery, wool, mineral oil and kerosene. Few manufactured goods are imported.

Cotton fabrics, raw silk, and silk fabrics make up a very large part of the exports. The United States buys over ninety per cent of the raw silk exported, and the countries of Asia buy eighty per cent of the cotton goods.

Adapted from Nations at Work

Packard, Sinott, Overton

Pages 596-601

Lesson XXXIV (continued)

A generalization is a statement which can be illustrated with many examples. Today's lesson will teach you three steps which will help you give examples for any generalizations.

Answers a and b for each step are done for you. Complete c and d yourself on this paper

Make your answers very clear and definite. Say exactly what you have in mind.

1. Use what you know about the past, present, and future. Be sure you indicate what period you have in mind.
 a. Tobacco growing in the Southern colonies became a specialized industry. They exported tobacco, but had to import clothing.
 b. Oil mining today is a specialized industry in Texas. Oil is exported, and fruits are imported.
 c.

 d.

2. Use what you know about different places, - your home, your city, your region, your country, other lands, Be sure you indicate the place clearly.
 a. Specialization in manufacturing in England makes textiles and important export. Dairy products are an import.
 b. Sheep raising is a specialized industry in Australia. Sheep are exported, and wheat foods are imported.
 c.

 d.

3. Use your personal experience,-what has happened in your home, in school, at play, in your club, while shopping, at the movies, in church contacts.
 a. Providence is a manufacturing city. It exports cheap jewelry and tools, and imports foods from other areas and countries.
 b. Oakland Beach residents specialize in fishing. They sell their fish and buy food and clothing from other places
 c.

 d.

Lesson XXXV

This is today's generalization: In union there is strength.

The stories give illustrations of this generalization. As you read, think of illustrations of your own.

Cooperation of England and America in Establishing the Monroe Doctrine

The Spanish colonies in Central and South America had revolted and declared themselves independent republics; thereupon a league of European monarchs called the Holy Alliance promised the king of Spain to conquer these new republics and give them back to him. England protested, and asked the United States also to oppose the Holy Alliance. After a little Hesitation President Monroe decided to do so, though it was possible that a great war might follow in which England and the United States would be one one side and most of Europe on the other. That came to be known as the Monroe Doctrine was contained in a famous message which he sent to Congress asserting that United States would allow no European nation to interfere with political affairs in either North or South America. -Adapted from School History of U. S. Stephenson Pages 255-6

Labor Unions

The growth of the factory industry gave the United States its labor question. The workers saw the factory owners getting rich, and they wanted their pay raised. They saw the public schools being started, and they wanted their children to have the advantages of an education. About 1827 the workingmen began to form unions and ask for free schools, shorter working days, and other improvements. The panic of 1837 put an end to many of the labor unions, because large numbers of men were thrown completely out of work. The unions were fromed again during the forties, and again they were hindered by a period of poor business which began in 1857. Nevertheless, the laboring man knew what he wanted--better pay, shorter hours, and an education for his children. The time would soon come when he would organize again and ask for reforms. -American People and Nation Tryon and Lingley Pages 392-3

The Granger Movement

Shortly after the close of the Civil War the farmers of the West--begin to organize. --In the new movement which they now launched the farmers demanded fairer rates from the railroads for moving their products.---

In 1867 the farmers formed an association called the Patron of Husbandry, which was organized for social meetings, entertainments, and education through lectures on the problems of the farm. Each local group was called a grange, and hence rose the name "Grangers."--All these movements were primarily designed to secure better treatment from the railroads.

- Standard History of America Lawler Pages 486-7

Lesson XXXV (continued)

Make your answers definite and clear.

Today's generalization is: In union there is strength.

1. Reread to find three illustrations in the story. Write them in this space.

2. Use the three steps to guide you in giving your illustrations. Suggestions are included for answers a and b. You are to complete them. c and d you are to fill in with your own illustrations.
Use past, present, and future.

A. Greek states

B. New England colonies

C.

D.

3. Think in what different places the generalization would apply.
a. In China today

b. In Italy, during the barbarian invasion

c.

d.

4. Use your own personal experience,-in school, at home, in the movies, shopping.
a. In your community

b. Among your family

c.

d.

Lesson XXXVI

This is today's generalization: Machinery has increased the produce of agriculture.

This story gives one illustration of this generalization. As you read think of other illustrations.

Machine-Worked Corn Field Expected to Set Record Yield

Il Paso, Ill., Oct. 16.- (AP)- An experiment which might revolutionize planting of the nations corn fields neared the end of its first trial year today. It promises bigger yields and slashed costs of production.

It was conducted on an 80-acre test field with no special preparation or extra fertilization. The plot was worked entirely by machinery.

The corn was drilled in rows only 20 inches apart, half the usual distance. The hills in each row were only 18 inches apart, with a single kernel of corn planted four inches deep in each hill, instead of two or three kernals.

Lester Pfister, director of the experiment, said more kernels were planted per acre and each stalk given more room in which to produce perfect ears.

Careful accounts of costs have been kept. A single acre harvested 98 bushels, and is expected to harvest 125-145 bushels per acre. Entire cost of preparing the seed bed was $2.77 an acre, previously costing $4.31.

-Adapted from Providence Evening Bulliten
October 16, 1939

Make your answers clear and definite.
In giving your illustrations, use the three steps:

1. Past, present, and future
2. Various places
3. Personal experience

There are suggestions below but try not to use them.

Suggestions:

First wheat reaper
Beginning of the cotton industry
Modern control of insect pests in farming
Farming in Warwick
Russian agriculture

LESSON XXXVII

As you read this story think of questions, topics, and activities associated with paper manufacturing.

Paper. Paper is made from wood-that is why we can have so many books, magazines, and newspapers. For centuries most of the paper used in America was made from cotton, linen, or woolen rags. During the last century, however, a method was found for making paper from wood, and since that time the use of wood pulp for paper making has become very common. Nine-tenths of the paper used in the United States today is made from wood.

Wood pulp for paper is made from many different kinds of trees, including spruce, hemlock, pine, and poplar. But most of the pulp used for paper is made from spruce that grows chiefly in the northern forest belt.

Paper industry centered in the northeastern states. Paper manufacturing in the United States is centered chiefly in the northeastern states, where conditions are favorable for the industry. Spruce trees, which supply a large part of the wood for making pulp, grow in the northeastern states. Here, too, plenty of cheap power is supplied by the numbrous waterfalls. Large quantities of pure, clear water are needed in manufacturing paper. This is available because the many lakes of the region tend to filter the dirt out of the streams flowing through them. Then, too, many of our great publishing and printing centers are found in the northeastern part of the country.

-United States in the Modern World
McConnell
Pages 108 and 109

1. At the top of your paper list your questions and topics about manufacturing paper. Be sure the questions are not answered in the story. Phrase your questions carefully.

2. On the bottom part of your paper list activities that would be fun to do. Have many different types of activity. State each activity clearly enough so there is no doubt about your meaning.

Lesson XXXVIII

Today's story shows how desire for trade or a higher standard of living helps countries to expand. As you read, think of other illustrations.

Greek Colonization

The growing spirit of commerce (in Greece) furnished a strong impulse to colonize. The coasts of the Aegean were indented with natural harbors; and the Greeks early derived from the Phoenicians the spirit of commerce and shared with them the trade routes of the sea. With the decline of the Phoenician power, the Greeks became the leading commercial people of the East. Like the Phoenicians, they dotted the shores of the Mediterranean with their trading posts. Greece thus became the mother of colonies, and from the eighth to the sixth century B.C. the territory of Hellas was continually growing wider and wider.

Morey's Ancient Peoples
Countryman, editor
Page 115

Advance of the Frontier

In a hundred years, between 1790 and 1890, the frontier line moved across the continent and disappeared. In 1890 the census bureau reported that the country was no longer divided into two portions--the occupied and the unoccupied. The American people had taken possession of their whole country.

The most noteworthy feature of this westward march is the fact that it was mainly a movement of individuals. It was not the action of a government deliberately planting colonies. Resourceful men a women gathered their belongings and set out with their families to seek their fortunes. They built towns or they settled farming regions. After a while they became restless, or their children did, or newcomers came from the East and the community became fairly populous. And then in a man and woman here and there a longing awakened to be off again into the wild country seeking better fortunes. Before long another family had taken the road toward the sunset a man, a woman, their children, in a huge, covered wagon, facing westward, fearless, independent, ready to take whatever came to them and not whimper. That was the spirit in which Americans slowly, without any set plan, pushed the frontier across the continent.

School History of the United States
Stephenson

Remember to use the helping steps:

1. Find the illustrations in the story.
2. Illustrate from past, present, and future.
3. Illustrate from various places.
4. Think of illustrations from your own personal experience.

1. On the top of your paper write illustrations of expansion through desire for trade.

2. On the lower part of your paper write illustrations of expansion through desire for a higher standard of living.

Lesson XXXIX

This story is about colonial amusements. As you read, think of illustrations to show how our amusements today are similar, and how they are different. You also might like to compare the colonial amusements with those of other nations.

Colonial Amusements

The amusements of the New England colonists consisted largely in a gathering together of the people. The assemblies were variously called logrollings, quilting bees, and corn huskings. Here the people raised new houses or barns, spun wool, made quilts, husked corn, prepared apples, and in many other ways joined together to aid one another. There were also shooting matches, where the members showed their skill, and on training days the settlers were given a little instruction in military training to prepare them for Indian attacks. The theater was not allowed. The Puritan would not celebrate Christmas and would not allow anyone else to do so. Instead, on Thanksgiving Day the family gathered from far and near to enjoy a great feast.

The Puritans were ever fearful of the devil and looked with the deepest hostility on all types of amusement as his handwork. Sunday observance was very strict.--- Card-playing and dancing were forbidden at all times, and in one state smoking in public was not allowed.

The amusements of the middle colonies were sleighing and skating, balls, picnics, singing schools, horse-racing, cricket, and bowling. The latter sport was especially favored by the Dutch. Bowling Green was named from the fact that here the Dutch played at bowls nightly. The colonists celebrated Christmas, New Year's Day, Easter, and May Day.

The stately home of the planter was generally built of wood or brick and, with its score of servants, was the abode of wealth and hospitality. Travelers were welcome at the planter's table, where a place was always ready for the stranger. As a consequence few taverns were needed in the Southern colonies. Christmas was celebrated with great festivities.

For amusement the planters were especially fond of horse-racing, fishing, hunting, dancing, and card-playing. In hunting they found an abundance of deer, bears, opossums, rabbits, foxes, and raccoons.

-Standard History of America
Lawler
Pages 176, 181, and 184

1. List illustrations on your paper to show how amusements today are similar to those of colonial times.

2. List illustrations to show how amusements today differ from colonial amusements.

3. List illustrations of amusements of other nations.

Lesson XL

Today you are to illustrate a generalization again. This is the generalization: Ports are the gateways of a country.

As you read this story, (1) note the illustrations in the story, and (2) think of original illustrations of the generalization.

Ports on Oceans and Lakes

Our country has great advantages for carrying on ocean and lake transportation. The length of its water boundaries and the number of its seaports and its ports on the Great Lakes are two advantages.

Good harbors are a necessity to transportation and commerce. They should afford protection from winds and waves, be ice-free, and have water deep enough for large vessels to dock. They must be large enough for many ships to anchor at one time and have docks and piers for loading and unloading all sorts of products in a short time.

To grow into a great port, however, a city must have other things besides its harbor. The region around and back of it, called the hinterland, must be well peopled and productive in order that there may be goods to be shipped away and markets for those brought in. There must also be means of inland communication connecting the port with the surrounding region.

-United States and Its Trade Relations
Jansen, Allen
Pages 109-110

The region of eastern Massachusetts, Rhode Island, and Connecticut is one of the most densely populated in the United States. Hence many of the ports of this section receive important cargoes of coal from Virginia, cotton from the South for the New England factories, fish from the sea for New England tables. Many ports ship lumber, and there are at least three harbors-Portland, Boston. New Haven that can be called world ports, that is, ports which ship across the seas.

- Exploring Geography
Casner, Gabfiel
Page 331

Mobile. This port is located on the Mobile River about thirty-three miles from the Gulf (of Mexico). It is the center of an extensive agricultural region, and it is nearer the industrial cities of the South than either New Orleans or Galveston. Mobile exports lumber, iron and steel products, coal, cotton, and cottonseed oil and meal. Ferilizer materials and bananas are among the city'sleading imports.

-Nations at Work
Packard, Sinott, Overton
Pages 314-315

This is the generalization: Ports are the gateways of a country.

List your illustrations on your paper.

Lesson XI

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- Exploring Geography
Garner, Caldwell
Page 331

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-Nations at Work
Packard, Binns, Overton
Pages 314-315

This is the generalization: Ports are the gateways of a country.

List your illustrations on your paper.

Lesson XLI

Today's generalization is this: The Machine Age has made life happier, but it also has brought many difficulties and problems.

As you read, think of original illustrations to show how machinery has brought happiness, but has also created problems.

It is often said that, with all the advantages which we have, people who live today are not any happier that those who lived five hundred years ago. How can this be with all the inventions that have been made available to improve life and living? The man of the world today would be more likely to believe anything he might hear about remarkable and unheard of results of invention than to disbelive. We hear that enormous chicken houses are electrically lighted in order to keep the hens at work more hours of the day, so they will lay more eggs, and we hear that a trout farm employs electric lights to attract the moths to the pool where the trout can catch them. We no longer doubt, but marvel. We hear of a radio pen that will broadcast pictures and maps, and the next day we see its results in the newspapers. Wherever there is a need, someone finds a way.

But the Machine Age has also brought many difficulties and problems. Man has had to key himself up to a more strenuous life with machines setting the pace. One of our gravest questions is: How can we prevent our machines from injuring or destroying us? One of the gravest problems is that this Machine Age often causes large numbers of men to be thrown out of work.

-Adapted from America and the New Frontier
Freeland, Adams
Pages 38, 41, and 42

This is the generalization: The Machine Age has made life happier, but it has also brought many difficulties and problems.

1. Write on your paper illustrations that show how the Machine Age has made life happier.

2. Write illustrations to show problems or difficulties created by the Machine Age.

Lesson XLII

This is the generalization: Means of transportation are constantly being improved.

The story includes two newspaper clippings which illustrate this generalization. As you read, think of other illustrations of this same generalization.

Italy Completes 538- Mile Road from the Red Sea to Addis Ababa

Washington- (National Geographic Society)- The new 538-mile motor highway from Assab on the Red Sea across the torrid Danakil desert to Addis Ababa, capital of Ethiopia, is almost completed. This means that more than 2,000 miles of motor roads have been completed in the three years of Italian occupation.

The road is an important part of the $650,000,000 six-year public works program in Italian East Africa. The new road is the shortest route from the Red Sea to the capital, and is 193 miles shorter than the road from the older port of Massaua, the first Italian project. Traffic on the new highway already exceeds 100 motor trucks and 30 passenger cars a day, including motor Pullmans carrying 26 passengers.

To obtain security and defence, Italy's first need was a network of highways made quickly available for communication. Small stone forts now cover important road centres. Transportation is also essential to Italy's plan for a million colonists in the more temperate and productive plateau areas.

Before Italian occupation the country virtually lacked any highways.

-Adapted from Providence Sunday Journal
Fall, 1939

Jamestown Span Work Progresses

Red-coated steel spanning the blue waters of lower Narragansett Bay is carrying the $3,104,000 Jamestown Bridge, steadily, sturdily from the Plum Beach shore of North Kingstown toward its Conanicut Island objective.

To date, more than a third of a mile of water has been covered by the stout framework of steel beams and girders, rising from row after row of piers sunk in the bed of the bay.

The skeleton of the long, level approach to the main span has been completed, and a height of 70 feet has been reached in construction of an incline. This incline will boost the centre span to a perch 135 feet above the water, so that shipping may pass beneath.

-Providence Evening Bulletin
October 17, 1939

This is the generalization: Transportation facilities are constantly being improved.

Write your illustrations on your paper.

Lesson XLIII

This story tells about a government test to find use for some of our surplus cotton supply. As you read, think of questions, topics, and activities associated with this story.

FSA Tests House Built of Cotton

Washington, Oct. 7 (AP)- Men who have built steel houses, mud houses, adobe houses and assembly-line frame houses are watching now the weather's wear on their first cotton house.

If a duck-covered dwelling in Coffee County, Alabama, stands the test, the South may find a new outlet for its cotton surplus.

The cotton house is the latest experiment in the Farm Security Administration's search for ways to house poor families comfortably within their incomes.

Housing families with the building materials close at hand is an FSA principle which has led its engineers to experiment with pine in the Southeast; cedar in the Northwest; steel in Tennessee and desert dirt in New Mexico. And now they are eyeing the house that is covered with cotton duck- the same duck long used by the United States Navy as water proof, sun proof, spot proof decking for ships.

- New York Times
October 7, 1939

1. Write on your paper the questions and topics suggested to you by the story.

2. Write the activities suggested to you by the story.

Lesson XLIV

This news clipping illustrates ways in which the government cares for the safety of its people. As you read, think of other ways in which the government does this.

Snow Covers Ice Spots Increasing Traffic Hazards

A steady fall of sticky snow was covering Rhode Island today, hiding icy spots on the hills and highways to increase travel hazards. The cold wave continued without letup.

Small craft were warned at 10:45 a.m. to watch for a disturbance moving up from the Virginia Capes accompanied by strong northeast winds. The warnings were posted from Block Island to Provincetown.

State, Providence, and U.E.R. officials reported that sanding and salting crews were out early in the morning to reduce ice hazards. When the fall reaches two inches in Providence, according to city yard officials, snow plow crews would be sent to clear the streets.

- Providence Evening Bulletin
January 8, 1940

On your paper list your illustrations to show how the government cares for the safety of its people.

Lesson XLV

This is the generalization: Nations make postage stamps to honor people and historic events.

The story for today gives one illustration showing how people and historic events are honored by being cast on postage stamps. As you read, think of other illustrations of this generalization.

Stamp Honors U. S.

Chungkumg, Jan.5.- (UP)- An issue of Chinese postage stamps Commemorating the 150th anniversary of the founding of the United States in 1789, when General George Washington was elected first President of the United States, has gone on sale here.

-Providence Evening Bulletin
January 6, 1940

On your paper write other illustrations of honoring people and events in this way.

ORIGINAL TABULATIONS OF RESPONSES

Series I — Pretest — Experimental

ACTIVITIES

I. Q.	Pupil	Creative: Orig.	Creative: Copied	Creative: Total	Intellectual: Orig.	Intellectual: Copied	Intellectual: Total	Manipulative: Orig.	Manipulative: Copied	Manipulative: Total	Unclassifiable	Total	Unacceptable
103	1.	4	1	5	0	0	0	3	2	5	1	11	0
95	2.	0	4	4	0	2	2	0	1	1	3	10	0
94	3.	1	0	1	3	1	4	0	2	2	0	7	2
93	4.	2	2	4	1	1	2	0	0	0	0	6	2
89	5.	3	0	3	3	4	7	0	4	4	0	14	2
89	6.	0	0	0	0	0	0	0	0	0	0	0	12
102	7.	7	1	8	7	0	7	0	0	0	0	15	6
101	8.	3	0	3	1	0	1	1	2	3	0	7	0
101	9.	1	1	2	1	1	2	1	1	2	1	7	0
101	10.	1	1	2	3	1	4	0	3	3	1	10	0
81	11.	0	0	0	0	0	0	0	0	0	0	0	6
96	12.	2	2	4	4	0	4	0	1	1	0	9	0
105	13.	3	5	8	2	1	3	1	2	3	0	14	0
105	14.	0	0	0	2	0	2	0	0	0	1	3	10
81	15.	0	0	0	7	1	8	0	1	1	0	9	6
86	16.	0	0	0	0	0	0	0	0	0	0	0	7
91	17.	0	0	0	4	5	9	2	4	6	2	17	0
87	18.	1	0	1	1	0	1	2	0	2	1	5	0
83	19.	0	0	0	0	0	0	0	0	0	0	0	2
108	20.	4	0	4	0	0	0	1	9	10	0	14	0
92	21.	7	2	9	0	0	0	2	2	4	0	13	3
101	22.	0	0	0	0	0	0	0	0	0	0	0	14
101	23.	3	1	4	4	0	4	0	2	2	1	11	0
97	24.	0	0	0	0	0	0	0	0	0	0	0	13
99	25.	0	3	3	0	3	3	0	1	1	0	7	0
99	26.	0	0	0	2	0	2	2	0	2	1	5	0
103	27.	0	0	0	0	0	0	0	0	0	0	0	8
103	28.	0	0	0	0	0	0	0	0	0	0	0	11
104	29.	2	0	2	2	1	3	1	2	3	0	8	0
90	30.	3	0	3	0	2	2	4	0	4	0	9	0
104	31.	0	0	0	0	0	0	0	0	0	0	0	16
107	32.	4	0	4	2	1	3	0	1	1	0	8	1
110	33.	1	3	4	1	2	3	1	9	10	1	18	2
103	34.	6	0	6	2	1	3	2	2	4	1	14	0
100	35.	0	0	0	0	0	0	0	0	0	0	0	14
Boys		42	20	62	43	17	60	13	36	49	11	182	72
Girls		16	6	22	9	10	19	10	15	25	3	69	65
Total		58	26	84	52	27	79	23	51	74	14	251	137

QUESTIONS

Enriching	Immature	Clarifying	Inconsequential	Total	Unacceptable
12	2	3	4	21	0
0	0	15	3	18	1
5	2	2	2	11	3
2	0	1	7	10	0
9	3	1	2	15	1
2	2	8	5	17	0
11	4	5	3	23	1
11	0	2	1	14	0
14	0	0	2	16	1
3	1	6	2	12	0
5	4	1	2	12	1
16	2	0	2	20	0
12	1	1	2	16	1
8	3	0	2	13	0
7	0	1	2	10	0
5	0	0	0	5	10
6	1	2	7	16	2
17	2	2	3	24	0
1	1	1	3	6	0
12	6	1	5	24	0
5	1	10	0	16	0
2	4	12	2	20	0
9	1	3	1	14	0
5	2	2	2	11	0
3	2	0	2	7	0
7	3	2	1	13	0
4	5	2	3	14	1
5	1	1	4	11	2
3	0	3	2	8	0
3	0	2	4	9	2
5	1	2	1	9	1
14	1	2	1	18	0
17	0	2	2	21	0
4	2	1	4	11	0
5	3	1	3	12	0
174	40	77	62	253	21
75	20	20	29	144	7
249	60	97	91	497	28

Series I — Retest

ACTIVITIES

I. Q.	Pupils	Creative			Intellectual			Manipulative			Unclassifiable		Total	Unacceptable
103	1.	1	4	5	5	5	10	0	2	2	0		17	0
95	2.	7	4	11	1	1	2	1	5	6	2		21	2
94	3.	3	8	11	1	0	1	0	4	4	0		16	1
93	4.	7	4	11	1	3	4	2	1	3	1		19	0
89	5.	6	8	14	5	1	6	0	2	2	1		23	1
89	6.	8	8	16	4	3	7	1	1	2	2		27	1
102	7.	19	9	28	5	0	5	1	1	2	2		37	1
101	8.	3	2	5	7	2	9	0	5	5	0		19	2
101	9.	4	2	6	0	6	6	0	1	1	0		13	2
100	10.	4	4	8	1	4	5	2	5	7	1		21	0
81	11.	2	4	6	6	2	8	2	2	4	2		20	0
96	12.	4	8	12	1	5	6	2	0	2	2		22	0
105	13.	12	13	25	0	1	1	3	0	3	0		29	0
105	14.	10	6	16	4	1	5	2	1	3	0		24	0
81	15.	7	4	11	5	4	9	2	4	6	1		27	1
86	16.	5	10	15	7	3	10	3	3	6	0		31	0
91	17.	9	6	15	5	4	9	1	1	2	0		26	0
87	18.	7	5	12	1	2	3	0	1	1	0		16	0
83	19.	6	6	12	0	1	1	0	7	7	1		21	0
108	20.	4	5	9	5	3	8	2	1	3	0		20	1
92	21.	6	5	11	2	2	4	0	0	0	0		15	0
101	22.	9	11	20	2	1	3	0	1	1	0		24	1
101	23.	1	5	6	9	0	9	1	2	3	0		18	0
97	24.	8	7	15	5	3	8	3	3	6	2		32	0
99	25.	4	3	7	2	0	2	2	3	5	0		14	0
99	26.	5	3	8	2	3	5	2	4	6	0		19	0
103	27.	5	0	5	5	2	7	0	0	0	0		12	0
103	28.	10	6	16	3	0	3	0	5	5	0		24	1
104	29.	5	3	8	1	2	3	0	4	4	0		15	0
90	30.	9	4	13	3	7	10	0	0	0	0		23	0
104	31.	14	6	20	0	0	0	0	0	0	1		21	0
107	32.	7	6	13	1	1	2	0	4	4	0		19	0
110	33.	8	7	15	3	0	3	0	8	8	0		26	0
103	34.	10	8	18	3	1	4	0	1	1	0		23	0
100	35.	9	3	12	1	2	3	0	1	1	0		16	0
Boys		144	148	292	77	54	131	25	50	75	15		506	13
Girls		94	56	150	29	21	50	7	33	40	3		244	1
Total		238	197	435	106	75	181	32	83	115	18		750	14

Experimental

QUESTIONS

Enriching	Immature	Clarifying	Incongruential	Total	Unacceptable
13	1	0	5	19	0
10	1	2	5	18	1
10	4	1	4	19	1
9	3	5	2	19	0
23	2	2	9	36	1
24	2	2	6	34	0
17	6	5	5	33	1
15	1	2	4	22	0
13	1	0	0	14	1
8	3	1	5	17	1
7	3	1	5	16	2
12	4	2	1	19	0
15	3	3	6	27	1
13	2	3	3	21	1
7	1	2	5	15	0
11	4	4	5	24	0
12	2	1	7	22	3
14	4	2	7	27	1
8	4	2	4	18	0
11	3	0	9	23	0
8	2	3	1	14	0
12	1	1	13	27	1
10	1	0	5	16	0
10	0	4	9	23	0
9	3	2	1	15	0
11	3	3	6	23	0
5	2	3	3	13	1
11	2	0	7	20	0
10	1	1	5	17	0
19	3	3	8	33	2
6	5	2	9	22	1
13	1	0	2	16	0
14	6	0	9	29	0
6	2	1	4	13	0
6	2	3	1	12	0
282	58	44	116	500	15
120	30	22	64	236	6
402	88	66	180	736	21

Series I Pretest Control A-Boys

ACTIVITIES QUESTIONS

I.Q.	Pupil	Creative Orig.	Creative Copied	Creative Total	Intellectual Orig.	Intellectual Copied	Intellectual Total	Manipulative Orig.	Manipulative Copied	Manipulative Total	Unclassifiable	Total	Unacceptable	Enriching	Immature	Clarifying	Inconsequential	Total	Unacceptable
93	1.	2	2	4	0	6	6	0	2	2	3	15	10	13	5	4	3	25	4
107	2.	7	2	9	7	2	9	3	3	6	0	24	1	9	2	0	2	13	11
101	3.	2	1	3	2	0	2	2	5	7	4	16	1	5	0	17	1	23	1
134	4.	3	1	4	8	4	12	1	2	3	0	19	0	19	4	6	3	32	0
93	5.	3	0	3	0	0	0	0	2	2	0	5	4	6	2	4	1	13	0
97	6.	7	0	7	0	0	0	0	1	1	0	8	0	1	0	19	2	22	1
116	7.	0	3	3	3	4	7	3	0	3	0	13	2	14	4	1	3	22	0
92	8.	0	0	0	0	0	0	0	0	0	0	0	9	1	3	4	0	8	8
82	9.	0	0	0	0	0	0	0	0	0	0	0	15	3	6	6	1	16	1
90	10.	3	0	3	0	1	1	1	0	1	2	7	1	6	2	5	1	14	0
115	11.	5	0	5	3	5	8	5	2	7	0	20	0	14	0	7	2	23	2
103	12.	4	1	5	1	1	2	0	4	7	0	14	2	2	7	5	4	18	0
86	13.	0	0	0	0	0	0	0	0	0	0	0	4	5	0	1	1	7	2
98	14.	10	0	10	0	0	0	1	1	2	4	16	0	2	2	17	0	21	1
107	15.	5	0	5	1	1	2	0	2	2	0	9	9	6	0	4	1	11	3
111	16.	2	2	4	5	2	7	3	2	5	0	16	0	14	1	1	2	18	0
92	17.	0	0	0	0	0	0	0	0	0	0	0	23	6	3	3	4	16	3
107	18.	2	0	2	0	1	1	0	1	1	0	4	0	7	2	1	4	14	0
103	19.	2	0	2	3	3	6	1	4	5	1	14	1	5	0	6	4	15	0
101	20.	1	0	1	2	0	2	0	1	1	0	4	13	0	0	15	1	16	1
85	21.	0	0	0	0	0	0	0	0	0	0	0	15	4	3	4	2	13	0
94	22.	0	0	0	0	0	0	0	0	0	0	0	16	6	2	6	4	18	0
105	23.	1	0	1	2	2	4	2	2	4	2	11	4	3	1	3	4	11	18
97	24.	0	0	0	0	0	0	0	0	0	0	0	0	10	1	0	1	12	0
90	25.	0	0	0	0	0	0	0	0	0	0	0	14	2	3	2	0	7	0
94	26.	1	0	1	0	0	0	0	0	0	1	2	13	4	4	6	0	14	1
90	27.	0	0	0	0	0	0	0	0	0	1	1	20	1	0	16	5	22	3
89	28.	0	0	0	1	0	1	0	1	1	0	2	11	3	0	9	3	15	4
86	29.	0	1	1	0	0	0	0	0	0	0	1	19	4	1	4	1	10	3
95	30.	1	0	1	1	0	1	1	7	8	2	12	0	2	0	20	1	23	3
95	31.	0	3	3	1	3	4	0	3	3	0	10	3	5	5	2	2	14	1
110	32.	2	1	3	2	3	5	0	0	0	0	8	0	8	0	1	1	10	0
87	33.	0	0	0	0	0	0	0	0	0	0	0	0	4	1	1	0	6	0
110	34.	2	0	2	1	0	1	1	5	6	1	10	0	4	0	1	3	8	0
104	35.	1	2	3	3	2	5	0	2	2	0	10	0	2	0	12	0	14	1
Total		66	19	85	46	40	86	24	55	79	21	271	210	200	64	213	67	544	72

Series I — Pretest — Control A - Girls

ACTIVITIES

I.Q.	Pupil	Creative: Orig.	Creative: Copied	Creative: Total	Intellectual: Orig.	Intellectual: Copied	Intellectual: Total	Manipulative: Orig.	Manipulative: Copied	Manipulative: Total	Unclassifiable	Total	Unacceptable
82	36.	0	0	0	0	0	0	0	1	1	0	1	1
82	37.	4	1	5	1	2	3	0	0	0	1	9	3
118	38.	1	0	1	7	6	13	0	0	0	0	14	0
79	39.	0	0	0	0	3	3	0	0	0	1	4	0
89	40.	4	0	4	0	1	1	1	5	6	0	11	0
130	41.	2	3	5	1	6	7	2	3	5	0	17	0
125	42.	0	0	0	2	1	3	2	0	2	0	5	4
82	43.	0	0	0	0	0	0	0	0	0	0	0	14
99	44.	4	0	4	0	3	3	0	0	0	0	7	1
100	45.	8	0	8	0	4	4	1	1	2	1	15	0
115	46.	6	3	9	2	4	6	0	0	0	1	16	7
89	47.	0	1	1	0	0	0	0	0	0	0	1	0
95	48.	5	1	6	0	0	0	0	2	2	1	9	1
89	49.	0	1	1	0	5	5	0	0	0	1	7	9
80	50.	0	0	0	0	0	0	0	0	0	0	0	15
101	51.	0	0	0	1	4	5	0	0	0	0	5	0
95	52.	2	1	3	0	0	0	0	1	1	3	7	2
122	53.	3	0	3	0	2	2	0	5	5	3	13	0
105	54.	1	3	4	0	0	0	1	1	2	1	7	2
108	55.	2	1	3	0	3	3	0	3	3	1	10	0
102	56.	1	0	1	3	1	4	2	2	4	0	9	0
111	57.	4	1	5	1	1	2	2	1	3	0	10	0
90	58.	2	0	2	0	0	0	0	5	5	6	13	0
119	59.	1	2	3	1	0	1	3	0	3	3	10	0
105	60.	8	0	8	0	0	0	0	1	1	0	9	0
101	61.	1	2	3	3	3	6	1	2	3	0	12	0
97	62.	1	0	1	2	3	5	0	1	1	0	7	0
103	63.	0	2	2	0	2	2	0	0	0	0	4	0
101	64.	3	0	3	0	3	3	1	1	2	6	14	1
104	65.	6	0	6	1	2	3	0	4	4	2	15	0
98	66.	0	0	0	0	0	0	0	0	0	0	0	21
87	67.	1	1	2	0	6	6	0	0	0	4	12	1
101	68.	0	0	0	0	2	2	0	0	0	0	2	17
103	69.	6	1	7	1	2	3	6	2	8	0	18	0
104	70.	5	0	5	6	2	8	2	1	3	0	16	0
99	71.	0	0	0	9	2	11	1	2	3	0	14	1
Total		81	24	105	41	73	114	25	44	69	35	323	100

QUESTIONS

Enriching	Immature	Clarifying	Inconsequential	Total	Unacceptable
3	1	0	1	5	0
1	3	3	1	8	0
9	4	0	2	15	0
4	0	1	2	7	2
8	1	3	2	14	1
23	0	0	9	32	7
4	0	3	0	7	1
5	1	4	3	13	1
7	0	5	1	13	1
14	1	9	3	27	2
7	0	2	1	10	5
2	0	8	3	13	0
3	3	5	3	14	3
2	1	10	4	17	1
4	2	5	2	13	0
3	0	0	1	4	0
5	0	2	3	10	2
2	1	11	1	15	2
7	0	1	2	10	1
7	0	1	1	9	1
9	2	0	2	13	0
3	2	0	2	7	8
0	0	16	1	17	0
7	1	0	2	10	0
0	1	16	1	18	0
0	0	20	1	21	3
5	1	3	1	10	0
5	0	1	0	6	0
3	0	15	2	20	0
7	0	6	2	15	0
5	1	6	6	18	0
2	3	5	4	14	2
4	3	8	2	17	0
0	0	0	0	0	12
9	0	4	5	18	1
7	5	3	2	17	0
186	37	176	78	474	48

Series I — Retest — Control A-Boys

ACTIVITIES — QUESTIONS

H. S.	Pupil	Creative: Orig.	Creative: Copied	Creative: Total	Intellectual: Orig.	Intellectual: Copied	Intellectual: Total	Manipulative: Orig.	Manipulative: Copied	Manipulative: Total	Unclassifiable	Total	Unacceptable	Enriching	Immature	Clarifying	Inconsequential	Total	Unacceptable
93	1.	3	4	7	0	4	4	2	1	3	1	15	2	6	5	6	5	22	1
107	2.	2	6	8	9	1	10	4	3	7	1	26	1	13	3	2	3	21	3
101	3.	2	2	4	6	1	7	3	3	6	0	17	0	4	0	0	2	6	12
134	4.	7	2	9	3	5	8	5	2	7	0	24	0	19	0	1	4	24	1
93	5.	3	0	3	0	1	1	2	2	4	4	12	1	8	4	5	2	19	1
97	6.	8	1	9	0	0	0	0	1	1	2	12	0	11	4	0	0	15	2
116	7.	1	1	2	12	2	14	3	2	5	0	21	0	13	0	0	6	19	1
92	8.	0	0	0	2	4	6	0	0	0	0	6	2	5	3	3	0	11	1
82	9.	0	0	0	0	0	0	0	2	2	2	4	0	10	4	0	1	15	1
90	10.	5	0	5	0	0	0	0	1	1	0	6	1	8	1	1	5	15	0
115	11.	5	5	10	3	5	8	1	4	5	0	23	0	14	3	3	5	25	0
103	12.	1	1	2	8	0	8	0	4	4	2	16	1	8	3	1	8	20	0
86	13.	0	0	0	0	0	0	0	0	0	0	0	7	8	0	0	1	9	0
98	14.	0	0	0	0	0	0	0	0	0	0	0	7	2	5	1	2	10	1
107	15.	4	2	6	9	1	10	2	4	6	0	22	1	13	1	0	2	16	1
111	16.	1	0	1	11	1	12	2	1	3	1	17	3	9	2	2	4	17	0
92	17.	0	0	0	0	0	0	0	0	0	0	0	15	9	4	3	1	17	1
107	18.	0	1	1	1	0	1	0	1	1	0	3	3	13	0	0	2	15	0
103	19.	2	2	4	5	2	7	2	2	4	1	16	0	14	2	1	5	22	0
101	20.	5	0	5	1	3	4	0	2	2	1	12	1	2	0	8	5	15	0
85	21.	0	0	0	0	0	0	0	0	0	0	0	10	5	5	3	2	15	0
94	22.	0	0	0	0	0	0	0	0	0	0	0	10	0	0	13	0	13	0
105	23.	1	0	1	5	4	9	1	0	1	0	11	3	7	3	3	0	13	1
97	24.	7	3	10	1	0	1	0	0	0	0	11	3	12	2	0	1	15	0
90	25.	0	0	0	0	0	0	0	0	0	0	0	8	0	2	6	1	9	0
94	26.	3	0	3	0	0	0	0	0	0	0	3	11	2	2	2	7	13	3
90	27.	0	0	0	0	0	0	0	0	0	0	0	12	6	4	3	1	14	0
89	28.	1	0	1	1	0	1	2	2	4	0	6	11	2	0	8	8	18	0
86	29.	0	0	0	0	0	0	0	0	0	0	0	3	5	1	3	2	11	0
95	30.	4	0	4	0	0	0	3	6	9	4	17	3	12	2	4	4	22	0
95	31.	0	1	1	4	4	8	1	1	2	0	11	1	8	1	2	2	13	1
110	32.	0	0	0	3	5	8	2	1	3	1	12	0	16	0	0	1	17	0
87	33.	0	0	0	1	0	1	5	0	5	0	6	0	1	4	2	0	7	0
110	34.	4	3	7	0	1	1	2	3	5	3	16	0	10	1	1	3	15	0
104	35.	3	2	5	3	2	5	4	0	4	0	14	1	3	3	12	1	19	0
Total		72	36	108	88	46	134	46	48	94	23	359	121	276	74	99	98	547	31

Series I — Retest — Control A - Girls

ACTIVITIES

I.Q.	Pupil	Creative			Intellectual			Manipulative			Unclassifiable	Total	Unacceptable
		Orig.	Copied	Total	Orig.	Copied	Total	Orig.	Copied	Total			
82	36.	3	0	3	1	1	2	0	0	0	0	5	2
82	37.	2	0	2	0	2	2	1	0	1	1	6	1
118	38.	1	0	1	14	5	19	1	0	1	0	21	2
79	39.	0	0	0	1	1	2	0	1	1	1	4	0
87	40.	2	0	2	1	0	1	1	1	2	6	11	1
130	41.	13	4	17	9	8	17	9	3	12	1	47	2
125	42.	10	3	13	1	4	5	5	2	7	0	25	0
82	43.	0	0	0	5	0	5	2	0	2	2	9	5
99	44.	2	1	3	3	2	5	0	1	1	0	9	2
100	45.	4	3	7	5	6	11	2	0	2	1	21	1
115	46.	7	4	11	3	0	3	1	2	3	0	17	0
87	47.	0	0	0	0	0	0	0	0	0	0	0	6
95	48.	4	0	4	1	2	3	0	2	2	1	10	1
87	49.	0	0	0	0	0	0	0	0	0	0	0	14
80	50.	1	0	1	0	1	1	0	0	0	1	3	1
101	51.	0	0	0	0	3	3	0	0	0	0	3	0
95	52.	1	2	3	1	0	1	0	1	1	4	9	0
122	53.	4	0	4	1	2	3	1	0	1	0	8	1
105	54.	7	1	8	0	0	0	0	1	1	0	9	1
108	55.	3	3	6	2	3	5	3	3	6	0	17	0
102	56.	0	0	0	4	1	5	2	1	3	0	8	0
111	57.	4	0	4	1	2	3	2	2	4	0	11	0
90	58.	3	0	3	2	0	2	2	0	2	2	9	4
119	59.	3	1	4	0	0	0	1	0	1	1	6	0
105	60.	5	1	6	2	1	3	2	2	4	0	13	1
101	61.	2	2	4	6	2	8	0	1	1	0	13	0
97	62.	0	0	0	3	3	6	0	1	1	1	8	0
103	63.	5	1	6	1	0	1	3	3	6	0	13	1
101	64.	1	0	1	5	5	13	2	0	2	1	17	0
104	65.	3	1	4	2	2	4	0	3	3	0	11	0
98	66.	6	2	8	2	6	8	1	0	1	0	17	1
87	67.	3	7	10	0	3	3	0	1	1	1	15	2
101	68.	4	1	5	1	5	6	0	1	1	1	13	0
103	69.	9	1	10	6	3	9	1	4	5	0	24	4
104	70.	6	0	6	7	1	8	0	2	2	0	16	0
99	71.	1	1	2	3	2	5	1	1	2	0	9	1
Total		119	39	158	93	79	172	44	38	82	25	437	53

QUESTIONS

Enriching	Immature	Clarifying	Inconsequential	Total	Unacceptable
2	1	1	0	4	0
2	4	0	0	6	0
12	4	1	6	23	0
4	0	1	3	8	1
7	3	4	4	18	0
13	5	7	5	30	0
8	4	3	7	22	0
4	8	0	1	13	0
5	1	3	2	11	1
13	9	0	5	27	1
12	2	1	5	20	0
5	2	2	4	13	0
0	3	11	2	16	0
3	3	4	3	13	0
5	3	4	1	13	0
5	1	2	3	11	0
7	3	8	1	19	0
1	2	14	0	17	0
6	1	0	5	12	2
5	1	1	4	11	0
8	2	1	5	16	0
4	2	0	6	12	0
2	1	12	0	15	0
0	0	15	0	15	0
2	1	17	1	21	0
7	3	0	3	13	0
4	1	2	6	13	0
7	0	0	6	13	0
7	2	1	4	14	0
4	0	2	0	6	0
7	6	1	6	20	0
8	1	6	5	20	0
3	2	4	3	12	0
6	3	0	5	14	0
7	1	3	7	18	0
8	2	3	0	13	0
203	87	134	118	542	5

Series I — Pretest — Control m- Boys

ACTIVITIES

H.	Pupil	Creative Orig.	Creative Copied	Creative Total	Intellectual Orig.	Intellectual Copied	Intellectual Total	Manipulative Orig.	Manipulative Copied	Manipulative Total	Unclassifiable	Total	Unacceptable
121	1.	3	0	3	3	2	5	0	7	7	0	15	1
99	2.	1	0	1	1	0	1	1	3	4	2	8	3
77	3.	1	0	1	0	1	1	0	2	2	3	7	7
84	4.	2	0	2	2	0	2	0	2	2	0	6	9
94	5.	2	0	2	0	0	0	0	0	0	1	3	10
97	6.	1	0	1	0	0	0	1	1	2	0	3	1
85	7.	6	4	10	0	4	4	0	2	2	1	17	3
94	8.	7	0	7	0	0	0	0	2	2	3	12	0
98	9.	4	4	8	0	2	2	1	4	5	0	15	0
94	10.	5	0	5	0	0	0	0	4	4	0	9	0
85	11.	0	0	0	0	0	0	0	0	0	0	0	0
91	12.	3	1	4	4	2	6	0	6	6	1	17	2
80	13.	1	0	1	1	2	3	0	3	3	0	7	4
101	14.	2	1	3	1	0	1	3	5	8	3	15	1
101	15.	5	0	5	2	0	2	0	0	0	6	13	0
87	16.	2	2	4	0	0	0	1	0	1	0	5	0
116	17.	7	1	8	2	3	5	4	8	12	3	28	0
125	18.	5	0	5	4	0	4	0	7	7	1	17	2
99	19.	2	0	2	0	0	0	0	2	2	6	10	3
79	20.	3	0	3	2	0	2	0	2	2	0	7	0
88	21.	3	0	3	0	1	1	1	2	3	0	7	0
94	22.	7	1	8	1	0	1	0	4	4	1	14	0
99	23.	9	1	10	1	0	1	1	3	4	1	16	0
96	24.	5	1	6	0	0	0	1	2	3	4	13	0
122	25.	2	1	3	2	0	2	0	0	0	8	13	1
104	26.	1	0	1	0	3	3	0	5	5	4	13	0
95	27.	5	2	7	0	0	0	2	2	4	0	11	0
85	28.	4	0	4	1	1	2	0	5	5	0	11	0
103	29.	2	0	2	0	2	2	0	4	4	0	8	0
112	30.	3	1	4	0	0	0	0	2	2	2	8	0
104	31.	1	2	3	1	2	3	0	3	3	0	9	0
96	32.	1	0	1	0	0	0	0	2	2	1	4	4
103	33.	1	0	1	4	0	4	0	4	4	1	10	1
121	34.	9	0	9	0	0	0	0	3	3	0	12	0
99	35.	0	1	1	0	0	0	0	2	2	1	4	0
95	36.	0	0	0	4	0	4	0	0	0	0	4	4
115	37.	4	0	4	3	0	3	5	5	10	0	17	0
Total		119	23	142	39	25	64	21	108	129	53	388	56

QUESTIONS

Enriching	Immature	Clarifying	Inconsequential	Total	Unacceptable
12	0	0	3	15	1
3	6	4	4	17	0
5	1	5	2	13	0
3	0	0	0	3	9
1	3	10	1	15	1
2	1	6	1	10	0
8	5	2	5	20	2
0	0	18	2	20	0
7	1	3	6	17	0
1	2	9	0	12	0
2	2	0	2	6	0
9	1	3	4	17	1
1	1	12	1	15	1
10	5	4	4	23	1
2	4	2	1	9	0
1	1	0	1	3	2
15	4	1	9	29	1
9	7	6	4	26	0
3	0	3	1	7	0
0	1	10	0	11	1
7	2	1	3	13	1
6	2	5	2	15	0
11	2	6	2	21	0
4	1	9	2	16	2
1	0	10	2	13	1
0	1	18	1	20	0
8	1	3	0	12	0
10	3	1	4	18	0
5	0	3	0	8	0
7	2	2	1	12	1
0	1	14	1	16	0
2	2	14	7	25	0
3	8	5	4	20	0
3	1	4	2	10	0
1	0	6	1	8	4
4	2	3	3	12	0
10	3	1	2	16	0
196	76	203	86	543	29

Series I — Pretest — Control M - Boys

ACTIVITIES

H.S.	Pupil	Orig.	Created Copied	Total	Orig.	Initiated Copied	Total	Orig.	Imitative Copied	Total	Unclassifiable	Total	Unacceptable
105	38.	5	4	9	0	0	0	0	3	3	1	13	0
95	39.	4	1	5	0	1	1	0	1	1	0	7	0
129	40.	8	0	8	3	5	8	2	5	7	2	25	0
81	41.	1	0	1	1	2	3	0	0	0	2	6	0
83	42.	0	0	0	0	0	0	0	0	0	0	0	9
106	43.	1	0	1	3	0	3	3	2	5	1	10	0
80	44.	0	0	0	2	6	8	0	0	0	1	9	0
99	45.	0	0	0	0	0	0	0	0	0	0	0	12
97	46.	5	0	5	0	0	0	0	4	4	1	10	0
102	47.	4	0	4	0	0	0	0	4	4	4	12	0
108	48.	6	0	6	0	0	0	0	5	5	1	12	0
95	49.	11	0	11	0	0	0	0	0	0	2	13	0
92	50.	11	0	11	1	0	1	0	0	0	1	13	5
86	51.	3	0	3	1	3	4	0	3	3	1	11	0
110	52.	5	0	5	2	0	2	1	6	7	1	15	1
76	53.	1	0	1	4	1	5	0	3	3	0	9	3
102	54.	7	0	7	0	0	0	0	3	3	3	13	1
98	55.	3	0	3	0	0	0	0	6	6	0	9	0
82	56.	0	0	0	0	0	0	0	0	0	0	0	0
119	57.	0	4	4	1	0	1	0	6	6	0	11	0
111	58.	2	0	2	0	0	0	0	5	5	0	7	0
110	59.	1	0	1	2	3	5	0	5	5	0	11	0
104	60.	4	0	4	1	0	1	0	2	2	1	8	0
98	61.	1	0	1	1	0	1	0	4	4	0	6	0
95	62.	0	0	0	0	0	0	0	0	0	0	0	0
120	63.	6	0	6	0	0	0	0	6	6	1	13	0
111	64.	9	0	9	2	0	2	2	5	7	1	19	0
90	65.	1	1	2	2	0	2	0	1	1	0	5	0
86	66.	4	0	4	3	4	7	1	4	5	0	16	2
111	67.	5	1	6	1	0	1	0	2	2	0	9	0
111	68.	5	0	5	0	0	0	0	2	2	0	7	0
98	69.	1	2	3	2	0	2	0	7	7	0	12	0
117	70.	3	0	3	7	2	9	0	5	5	0	17	0
108	71.	5	3	8	1	0	1	0	7	7	0	16	1
77	72.	0	0	0	0	0	0	0	1	1	14	15	1
101	73.	3	1	4	4	1	5	0	4	4	1	14	3
76	74.	0	0	0	0	0	0	0	0	0	0	0	14
93	25.	0	0	0	0	0	0	0	0	0	0	0	0
Total		125	17	142	44	28	72	9	111	120	39	373	43

QUESTIONS

Exhibiting	Initiative	Classifying	Unsequential	Total	Unacceptable
0	0	18	1	19	0
3	3	4	2	12	0
10	1	1	13	25	1
7	3	0	5	15	0
2	4	3	1	10	0
4	5	4	2	15	0
8	2	4	2	16	0
5	2	2	3	12	0
7	1	2	4	14	0
7	1	1	1	10	2
2	0	7	4	13	0
1	3	16	0	20	0
2	0	24	0	26	0
10	5	3	3	21	0
0	0	17	0	17	2
0	0	15	2	17	0
5	0	2	3	10	3
8	1	1	6	16	0
3	2	0	2	7	0
2	0	16	1	19	0
8	2	3	3	16	0
10	4	1	4	19	0
3	3	6	2	14	2
6	4	2	1	13	0
5	2	4	1	12	0
15	1	5	6	27	0
9	3	2	5	19	0
3	0	9	1	13	0
10	2	2	7	21	0
3	3	1	1	8	0
7	1	1	4	13	0
4	2	3	8	17	0
9	2	1	2	14	0
7	2	8	1	18	2
6	3	1	1	11	0
9	4	5	2	20	4
0	0	0	0	0	11
1	1	10	3	15	0
201	72	204	107	584	27

Series I — Pretest — Control M-Girls — 1114

ACTIVITIES — QUESTIONS

I.Q.	Pupil	Creative: Orig.	Creative: Copied	Creative: Total	Intellectual: Orig.	Intellectual: Copied	Intellectual: Total	Manipulative: Orig.	Manipulative: Copied	Manipulative: Total	Unclassifiable	Total	Unacceptable	Enriching	Immature	Clarifying	Inconsequential	Total	Unacceptable
92	76.	0	0	0	0	0	0	0	0	0	0	0	6	1	0	5	3	9	0
100	77.	0	2	2	5	0	5	2	1	3	1	11	0	1	0	16	2	19	0
91	78.	3	2	5	1	2	3	0	4	4	0	12	0	11	1	2	3	17	0
116	79.	4	2	6	1	0	1	1	1	2	1	10	0	3	2	7	4	16	0
103	80.	4	1	5	0	0	0	0	0	0	1	6	1	6	0	2	2	10	1
109	81.	3	2	5	2	3	5	0	1	1	0	11	0	2	0	3	1	6	1
101	82.	2	0	2	0	0	0	1	1	2	1	5	0	1	1	9	0	11	0
94	83.	0	0	0	0	0	0	0	0	0	0	0	0	7	5	0	3	15	0
98	84.	4	0	4	0	0	0	0	0	0	1	5	5	3	2	2	5	12	0
96	85.	7	0	7	0	0	0	0	0	0	2	9	0	6	1	0	1	8	0
90	86.	5	0	5	5	0	5	0	2	2	1	13	0	2	7	1	7	17	0
92	87.	0	0	0	0	0	0	0	0	0	0	0	6	4	1	1	3	9	1
106	88.	0	0	0	0	0	0	0	0	0	0	0	8	2	3	1	3	9	0
100	89.	4	0	4	2	1	3	3	5	8	0	15	1	13	3	3	6	25	0
94	90.	3	0	3	0	1	1	0	4	4	0	8	0	8	0	5	1	14	2
99	91.	5	0	5	6	0	6	1	1	2	0	13	1	6	3	7	3	19	0
100	92.	4	2	6	1	1	2	3	2	5	5	18	0	3	5	2	7	17	0
107	93.	0	0	0	0	0	0	0	0	0	0	0	10	4	0	5	1	10	0
103	94.	7	1	8	1	0	1	1	0	1	3	13	0	0	0	26	1	27	0
109	95.	8	1	9	0	0	0	0	6	6	1	16	1	9	6	2	5	22	0
92	96.	0	0	0	0	0	0	0	3	3	1	4	0	5	3	2	0	10	0
95	97.	10	1	11	0	1	1	0	0	0	0	12	0	4	1	5	2	12	1
116	98.	3	0	3	0	0	0	1	0	1	10	14	0	7	4	3	3	17	1
108	99.	9	1	10	2	1	3	0	0	0	0	13	0	6	4	1	1	12	0
56	100.	0	0	0	0	0	0	0	0	0	0	0	3	2	1	11	3	17	4
99	101.	7	0	7	1	0	1	0	2	2	0	10	0	6	3	1	2	12	1
104	102.	6	0	6	0	0	0	0	1	1	6	13	0	4	0	2	1	7	1
91	103.	2	0	2	5	1	6	0	1	1	1	10	0	5	0	8	6	22	1
100	104.	0	0	0	0	0	0	0	0	0	0	0	10	3	1	1	2	7	0
104	105.	3	1	4	1	2	3	0	4	4	0	11	2	8	4	2	1	15	0
98	106.	0	0	0	0	0	0	0	2	2	0	2	0	7	2	0	0	9	0
Total		103	16	119	33	13	46	13	41	54	35	254	54	152	63	135	82	432	14

Series I — Pretest — Control M-Girls

ACTIVITIES — QUESTIONS

I.Q.	Pupil	Creative Orig.	Creative Copied	Creative Total	Intellectual Orig.	Intellectual Copied	Intellectual Total	Manipulative Orig.	Manipulative Copied	Manipulative Total	Unclassifiable	Total	Unacceptable	Enriching	Immature	Clarifying	Inconsequential	Total	Unacceptable
97	107.	3	1	4	0	0	0	0	6	6	0	10	0	0	0	14	0	14	0
94	108.	9	0	9	0	0	0	0	1	1	3	13	1	2	0	12	0	14	1
102	109.	4	13	17	0	0	0	0	1	1	0	18	0	2	4	2	2	10	0
81	110.	0	0	0	0	0	0	0	1	1	0	1	1	5	1	5	1	12	0
91	111.	3	2	5	0	0	0	0	5	5	0	10	2	4	3	2	2	11	1
97	112.	1	0	1	0	0	0	0	0	0	6	7	0	5	3	5	1	14	0
117	113.	1	0	1	0	0	0	0	0	0	1	2	0	9	2	1	1	13	0
105	114.	3	0	3	0	0	0	1	0	1	7	11	0	3	1	5	0	9	0
101	115.	11	5	16	4	0	4	0	1	1	0	21	1	9	0	3	9	21	4
106	116.	1	0	1	0	0	0	0	0	0	0	1	0	0	3	1	0	4	0
112	117.	5	0	5	0	0	0	2	2	4	1	10	0	7	2	4	0	13	0
85	118.	0	0	0	0	0	0	0	0	0	3	3	7	2	0	0	0	2	12
86	119.	1	1	2	0	1	1	0	5	5	0	8	0	1	0	4	2	7	2
102	120.	0	0	0	0	0	0	0	0	0	0	0	18	2	0	0	2	4	3
108	121.	1	1	2	0	1	1	0	3	3	0	6	0	9	1	1	3	14	0
110	122.	0	3	3	0	1	1	0	5	5	0	9	0	5	1	0	1	7	0
92	123.	8	0	8	0	0	0	1	0	1	3	12	4	3	0	2	5	10	1
93	124.	4	0	4	6	1	7	2	0	2	0	13	1	16	1	5	1	23	0
80	125.	0	0	0	0	0	0	0	1	1	2	2	13	3	0	0	1	4	1
98	126.	6	2	8	0	1	1	1	2	3	3	15	0	4	3	1	8	16	2
103	127.	8	0	8	0	0	0	0	5	5	4	17	1	7	2	1	3	13	3
95	128.	4	1	5	2	2	4	0	3	3	1	13	1	6	2	0	3	11	0
108	129.	4	0	4	4	2	6	0	3	3	0	13	0	3	2	7	2	14	0
90	130.	5	0	5	2	0	2	0	1	1	0	8	0	5	2	2	1	10	0
106	131.	4	1	5	0	2	2	1	3	4	1	12	0	5	0	1	4	10	0
98	132.	3	0	3	1	0	1	0	0	0	2	6	3	5	0	0	2	7	4
108	133.	2	3	5	0	1	1	1	1	2	7	15	0	6	2	7	2	17	0
91	134.	1	1	2	4	3	7	0	0	0	0	9	0	8	2	3	2	15	2
111	135.	9	3	12	4	3	7	0	3	3	0	22	0	1	1	16	2	20	1
100	136.	5	0	5	0	1	1	0	1	1	1	8	0	2	4	5	3	14	2
113	137.	2	2	4	5	1	6	1	1	2	0	12	0	7	0	2	2	11	0
Total		108	39	147	32	20	52	10	54	64	44	307	53	146	42	111	65	364	39

Series II Pretest Experimental
ILLUSTRATIONS of a SPECIFIC IDEA

I.D.	Pupil	Specific I	Specific II	General II	General III	Total	Incompatible I	Incompatible II	Total	Indefinite	Total	Unaccountable	
103	1.	8	0	0	5	5	2	0	0	2	7	22	3
95	2.	4	0	0	1	1	2	0	0	2	2	9	8
94	3.	9	0	0	7	7	0	0	0	0	6	22	0
93	4.	5	0	0	0	0	5	0	0	5	4	14	2
89	5.	3	0	0	8	8	0	0	0	0	10	21	7
89	6.	5	0	0	12	12	0	5	0	5	4	26	1
102	7.	6	0	0	10	10	1	0	0	1	7	24	3
101	8.	9	0	0	3	3	0	0	0	0	7	19	0
101	9.	6	0	0	2	2	1	0	0	1	12	21	3
101	10.	3	0	0	9	9	0	0	0	0	3	15	6
87	11.	1	0	0	1	1	1	0	0	1	3	6	7
96	12.	10	0	0	7	7	0	0	0	0	8	25	8
105	13.	16	0	0	0	0	1	0	1	2	7	25	0
105	14.	13	0	0	0	0	4	0	2	6	14	33	0
81	15.	15	0	0	1	1	9	0	0	9	4	29	2
86	16.	13	0	0	0	0	0	0	0	0	6	19	1
91	17.	6	0	0	4	4	0	0	0	0	7	17	9
87	18.	10	0	0	0	0	6	0	0	6	7	23	1
83	19.	4	0	0	0	0	4	0	0	4	6	14	0
108	20.	8	0	0	0	0	1	0	0	1	16	25	8
92	21.	5	0	0	7	7	7	0	0	7	4	23	0
101	22.	6	0	0	3	3	3	0	1	4	8	21	4
101	23.	12	0	0	0	0	2	0	0	2	2	16	0
97	24.	5	0	0	6	6	3	0	0	3	2	16	6
99	25.	4	0	0	4	4	0	0	0	0	4	12	1
99	26.	4	0	0	0	0	0	0	0	0	3	7	5
103	27.	6	0	0	0	0	1	0	0	1	5	12	5
103	28.	10	0	0	5	5	0	0	3	3	0	18	7
104	29.	3	0	0	5	5	0	0	1	1	6	15	3
90	30.	2	0	0	1	1	2	0	0	2	10	15	2
104	31.	12	0	0	0	0	1	0	2	3	7	22	10
109	32.	4	0	0	6	6	1	0	0	1	6	17	0
110	33.	13	0	0	10	10	2	0	0	2	7	32	0
103	34.	5	0	0	0	0	8	0	0	8	8	21	2
100	35.	3	0	0	0	0	5	0	2	7	2	12	0
Boys		117	0	0	80	80	49	5	4	58	154	469	57
Girls		71	0	0	37	37	23	0	8	31	60	197	41
Totals		248	0	0	117	117	72	5	12	89	214	668	98

Series II Retest Experimental

ILLUSTRATIONS as a SPECIFIC IDEA

I.Q.	Pupil	Specific IV	V	General VI	Total	IV	Incompatible II	III	Total	Indefinite	Total	Unacceptable
103	1.	11	2	0	3 5	1	0	1	2 6		24	1
95	2.	12	2	0	1 3	5	0	1	6 12		33	0
94	3.	8	0	0	0 0	4	0	0	4 8		20	0
93	4.	9	0	0	0 0	4	0	0	4 10		23	2
89	5.	17	0	0	5 5	0	0	0	0 4		26	6
89	6.	10	0	0	4 4	3	2	0	5 7		26	2
102	7.	23	0	0	7 7	2	0	0	2 8		40	4
101	8.	16	0	0	2 2	1	0	0	1 9		28	1
101	9.	9	0	0	0 0	3	0	1	4 13		26	5
101	10.	13	0	0	8 8	2	0	0	2 4		27	2
81	11.	10	0	0	5 5	2	1	0	3 7		25	0
96	12.	12	0	0	6 6	0	0	0	0 18		36	0
105	13.	30	0	0	9 9	0	1	0	1 5		45	3
105	14.	26	0	0	0 0	3	0	1	4 12		42	2
81	15.	11	0	0	0 0	8	0	2	10 14		33	2
86	16.	13	0	0	9 9	0	0	0	0 22		24	3
91	17.	17	0	0	2 2	1	0	0	1 12		32	0
88	18.	20	0	0	4 4	2	0	0	2 18		44	0
83	19.	11	0	0	3 3	4	0	0	4 6		24	3
108	20.	16	0	0	1 1	1	0	0	1 4		22	0
92	21.	14	0	0	1 1	3	0	0	3 5		23	2
101	22.	6	0	0	4 4	3	1	1	5 13		28	8
101	23.	25	0	0	1 1	1	0	2	3 7		36	0
97	24.	10	0	0	0 0	2	0	0	2 7		19	2
99	25.	11	0	0	4 4	0	0	0	0 6		21	5
99	26.	8	0	0	1 1	2	1	1	4 6		19	2
103	27.	7	0	1	0 1	6	0	5	11 14		23	2
103	28.	17	0	0	4 4	4	2	0	6 5		32	2
104	29.	8	0	0	5 5	4	0	0	4 5		22	0
90	30.	6	0	0	1 1	4	0	1	5 3		15	1
104	31.	15	0	0	1 1	5	0	1	6 7		29	13
107	32.	12	0	0	4 4	2	0	0	2 8		26	0
110	33.	21	0	0	10 10	1	0	2	3 13		47	0
103	34.	12	0	0	3 3	5	0	1	6 12		33	3
100	35.	8	0	0	0 0	6	0	5	11 3		22	0
Boys		339	4	6	75 79	53	5	9	67	204	689	46
Girls		135	0	1	33 34	41	3	16	60	79	308	30
Total		474	4	1	108 113	94	8	25	127	283	997	76

Series II Pretest Cmtrol A-Boys

ILLUSTRATION-os-a- SPECIFIC IDEA

I.Q.	Pupil	Specific IV	General II	VI	Total	IV	Incompatible II	VI	Total	Indefinite	Total	Unaccept-able
93	1.	12	0	18	18	15	0	0	15	15	60	7
107	2.	13	0	6	13	1	0	0	1	8	35	0
101	3.	5	0	13	13	5	0	0	5	8	31	5
134	4.	10	0	10	10	6	0	0	6	2	28	0
93	5.	6	0	5	5	5	0	0	5	4	20	2
97	6.	3	0	0	0	8	0	0	8	6	17	1
116	7	16	0	5	5	3	0	0	3	3	27	0
98	8.	5	0	6	6	4	0	1	5	4	20	3
82	9.	5	0	1	1	1	0	0	1	1	8	0
90	10.	8	0	2	2	7	0	0	7	4	13	4
115	11.	13	1	11	12	1	0	0	1	7	33	1
103	12.	13	0	6	6	0	1	0	1	6	26	1
86	13.	2	0	3	3	2	0	0	2	3	10	0
98	14.	5	2	3	5	0	0	1	1	11	22	3
107	15.	10	0	11	11	2	0	0	2	3	26	4
111	16	7	1	8	9	2	0	0	2	9	27	1
92	17.	10	1	4	5	4	0	0	4	3	22	5
107	18.	5	0	1	2	1	0	0	1	2	10	1
103	19.	6	0	4	5	0	0	0	0	2	13	0
101	20.	3	1	2	3	6	5	0	11	10	27	0
85	21.	5	0	0	0	11	0	0	11	9	25	10
94	22.	5	0	6	6	6	0	0	6	17	34	1
105	23	0	2	8	10	0	0	0	0	13	23	10
97	24.	2	0	0	0	7	0	0	7	5	14	4
90	25.	4	0	3	3	5	0	0	5	8	20	5
94	26.	6	0	4	4	0	0	0	0	5	15	13
90	27.	12	2	0	2	5	0	0	5	13	32	0
89	28.	5	0	8	8	0	0	0	0	11	24	19
86	29.	0	0	0	0	0	0	0	0	25	25	8
95	30.	6	2	13	15	6	0	0	6	5	32	1
95	31.	6	2	1	6	9	6	0	0	6	6	27
110	32.	4	3	0	0	3	0	0	0	0	5	12
89	33.	1	0	0	4	4	7	0	0	7	4	16
110	34.	5	3	0	6	9	0	0	0	0	11	25
104	35.	3	0	0	0	0	0	0	0	0	11	14
Total		213	28	2	177	209	126	6	2	134	259	813

Series II Pretest Control A-Girls

ILLUSTRATION-of-a-SPECIFIC IDEA

I.Q.	Pupil	Specific III	General II	III	Total	IV	Incompatible V	VI	total	Indefinite	Total	Unaccept-able	
82	36.	3	0	2	2	4	0	0	4	2	11	2	
82	37.	4	0	1	1	3	0	0	3	7	15	3	
118	38.	9	1	11	12	1	0	0	1	8	30	4	
79	39.	4	0	3	3	1	0	0	1	3	11	1	
87	40.	1	0	0	0	2	0	0	2	5	8	11	
130	41.	8	0	14	14	2	0	0	2	8	32	20	
125	42.	4	4	9	13	6	0	0	6	2	25	6	
82	43.	0	0	0	0	0	0	0	0	3	3	78	
99	44.	4	0	0	0	2	0	0	2	6	12	0	
100	45.	2	4	3	7	1	0	0	1	9	19	3	
115	46.	3	1	2	3	3	0	0	3	6	15	1	
87	47.	6	0	1	1	6	0	0	6	4	17	4	
95	48.	6	0	2	2	3	1	1	5	3	16	12	
89	49.	6	1	15	16	8	0	0	8	14	44	4	
80	50.	4	0	1	0	1	2	0	1	3	7	15	5
101	51.	1	0	0	1	1	12	1	0	13	1	16	1
95	52.	4	0	0	0	0	6	0	0	6	6	16	0
122	53.	3	0	0	3	3	7	1	0	8	7	21	0
105	54.	0	0	0	4	4	7	0	0	7	3	14	4
108	55.	5	0	0	13	13	5	0	0	5	5	28	3
102	56.	1	0	0	3	3	2	0	0	2	1	7	2
111	57.	3	1	0	3	4	5	0	0	5	0	12	1
90	58.	2	2	0	1	3	4	0	0	4	9	18	4
111	59.	7	1	0	1	2	2	0	0	2	5	16	0
105	60.	4	1	0	1	2	4	0	0	4	4	14	4
101	61.	6	0	0	7	7	1	0	0	1	1	15	5
97	62.	1	0	0	3	3	3	0	0	3	7	14	0
103	63.	3	1	0	10	11	5	0	0	5	7	26	1
101	64.	7	0	0	3	3	14	0	0	14	2	26	1
104	65.	4	1	0	5	6	5	0	0	5	1	16	0
98	66.	7	1	0	2	3	4	0	0	4	7	21	4
87	67.	1	0	0	0	0	3	0	0	3	6	10	25
101	68.	5	0	0	0	8	7	0	0	7	8	20	5
103	69.	3	3	0	14	17	3	0	0	3	6	29	0
104	70.	8	0	0	0	0	2	0	0	2	4	14	1
99	71.	4	0	0	2	2	1	0	2	3	4	13	6
Total		143	22	1	139	162	146	3	4	153	181	639	221

Series II Retest Control A-Girls

ILLUSTRATION-of-a-SPECIFIC IDEA

H.S.	Pupil	Specific		Non-specific		Total		Incompatible		Total	Indefinite	Total	Unacceptable
		II		III			IV		VI				
82	36.	3	0	0	1	1	4	0	0	4	3	11	1
82	37.	2	1	0	2	3	0	2	0	2	3	10	1
118	38.	9	3	0	10	13	0	0	0	0	3	25	1
79	39.	3	1	0	0	1	0	0	0	0	1	5	1
87	40.	3	1	0	4	5	4	0	0	4	1	13	8
130	41.	12	3	0	16	19	15	0	0	15	9	53	5
125	42.	10	4	5	5	14	0	0	0	0	6	30	1
82	43.	0	0	5	6	11	8	0	0	8	6	25	13
99	44.	9	1	0	5	6	2	0	0	2	3	20	1
100	45.	4	2	0	13	15	7	3	0	10	5	34	1
115	46.	4	3	0	6	9	4	0	0	4	4	21	8
87	47.	2	5	0	0	5	0	0	0	0	4	11	8
95	48.	5	0	0	2	2	2	0	0	2	5	14	11
87	49.	1	1	0	5	6	7	0	0	7	8	22	10
88	52.	2	0	0	1	1	0	0	0	0	3	6	3
101	57.	3	3	0	6	9	2	0	0	2	2	16	8
95	52.	5	0	0	0	0	8	1	9	18	3	26	1
122	53.	6	0	0	6	6	8	0	0	8	9	29	7
105	54.	9	1	0	5	6	6	0	0	6	0	21	0
108	55.	4	2	0	12	14	5	1	0	6	3	27	1
101	56.	4	3	0	2	5	3	0	0	3	2	14	0
111	57.	4	1	0	7	8	5	0	1	6	0	18	2
90	58.	1	2	0	2	4	5	3	6	14	2	21	5
119	59.	8	1	0	3	4	1	0	0	1	3	16	2
105	60.	12	2	0	8	10	1	0	0	1	4	27	0
101	61.	2	0	0	4	4	0	0	0	0	4	10	10
97	62.	7	0	0	6	6	6	0	0	6	2	21	0
103	63.	2	0	0	8	8	5	0	0	5	1	16	3
101	64.	11	1	0	5	6	8	0	0	8	4	29	5
104	65.	13	0	0	2	2	0	0	0	0	2	17	8
98	66.	6	0	0	2	2	3	0	0	3	3	14	0
87	67.	6	0	0	11	11	16	3	0	19	2	38	5
101	68.	3	0	0	3	3	2	0	0	2	5	13	4
103	69.	15	5	0	17	22	0	0	1	1	2	40	1
104	70	7	2	0	11	13	0	0	0	0	1	21	3
99	71.	6	0	0	9	9	4	0	0	4	2	21	3
Total		203	48	10	205	263	141	13	17	171	120	738	115

Series II Pretest Control m-Boys

ILLUSTRATION of a SPECIFIC IDEA

IQ	Pupil	Specific	General III	General V	General III	General Total	Incompatible III	Incompatible II	Incompatible VII	Incompatible Total	Specific Errors	Total	Specific Score
121	1.	6	5	0	4	9	0	0	0	0	4	19	2
99	2.	7	1	0	3	4	0	0	0	0	1	12	4
94	3.	5	1	0	2	3	1	0	0	1	3	12	8
87	4.	2	2	0	0	2	2	0	0	2	7	13	3
94	5.	0	0	0	0	0	0	0	0	0	3	3	6
87	6.	2	0	0	3	3	1	0	0	1	3	9	3
85	7.	0	0	0	0	0	0	0	0	0	3	3	6
94	8.	5	0	0	0	0	0	0	0	0	3	8	6
98	9.	4	3	0	4	7	2	0	0	2	22	35	4
94	10	8	1	0	1	2	5	0	1	6	4	20	0
85	11.	2	0	0	0	0	0	0	0	0	2	4	1
91	12.	5	0	0	0	0	5	0	0	5	5	15	9
80	13.	3	1	0	0	1	14	1	0	15	2	21	10
101	14.	4	1	0	11	12	0	0	3	3	12	31	8
101	15.	1	1	0	3	4	0	0	0	0	6	11	6
87	16.	3	0	1	0	1	0	0	0	0	2	6	5
116	19.	11	4	0	10	14	8	4	2	14	10	49	1
125	18.	5	3	0	6	9	1	0	0	1	1	16	4
99	19.	0	1	0	0	1	2	0	0	2	11	14	10
79	30.	1	0	0	0	0	1	0	0	1	5	7	8
88	21.	1	0	0	1	1	4	0	0	4	0	6	0
94	22.	2	1	0	3	4	8	0	0	8	6	20	2
99	23.	10	0	0	5	6	2	0	0	2	10	28	0
95	24.	5	1	0	2	3	3	0	0	3	8	19	0
122	25.	8	0	1	4	5	1	1	0	2	10	25	0
104	26.	4	1	0	0	1	5	0	0	5	16	26	1
95	27.	10	0	0	1	1	1	0	0	1	3	15	5
85	28.	6	1	0	3	4	0	0	0	0	4	14	1
103	29.	11	3	0	7	10	1	0	0	1	3	25	0
112	30	6	0	0	4	4	2	0	1	3	1	14	0
104	31.	8	3	0	8	11	4	0	0	4	3	26	0
96	32.	3	0	0	0	0	1	0	11	12	9	24	5
103	33	10	3	0	1	4	0	0	0	0	6	20	0
121	34.	8	0	0	2	2	2	0	2	4	9	15	8
99	35.	3	0	0	1	1	1	0	0	1	13	18	0
95	36.	10	0	0	3	3	5	0	0	5	5	23	2
115	37.	8	4	0	1	5	2	0	0	2	9	24	3
Totals		179	42	2	93	137	84	6	20	110	224	650	123

Series II Pretest Control m-Boys

ILLUSTRATION-of-a-SPECIFIC IDEA

C.A.	Rep.	Specific	General IV	V	VI	Total	Incompatible IV	V	VI	Total	Undetermined	Total	Uncategorizable
105	38.	5	0	0	4	4	0	0	1	1	10	20	4
95	39.	6	0	0	2	2	1	0	0	1	2	11	1
127	40.	6	0	0	9	9	2	0	0	2	7	24	2
81	41.	5	2	0	2	4	4	0	0	4	1	14	0
83	42.	6	0	0	1	1	8	0	0	8	5	20	0
106	43.	5	3	0	6	9	2	0	0	2	5	21	0
80	44.	5	4	0	3	7	2	0	0	2	2	16	3
99	45.	9	0	0	4	4	6	0	0	6	6	25	1
97	46.	1	1	0	0	1	1	0	0	1	3	6	1
102	47.	9	0	0	6	6	0	0	0	0	8	23	0
108	48.	5	0	0	2	2	1	0	0	1	5	13	1
95	49.	3	0	0	6	6	0	0	0	0	3	12	1
92	50.	7	0	0	2	2	4	0	3	7	2	18	11
86	51.	14	4	0	4	8	0	0	0	0	1	23	1
110	52.	17	1	0	5	6	3	0	0	3	2	28	0
76	53.	3	0	0	0	0	1	0	1	2	4	9	10
102	54.	5	0	0	1	1	5	0	0	5	3	14	0
98	55.	4	10	0	0	10	5	0	0	5	3	22	0
82	56.	3	1	0	2	3	2	0	0	2	4	12	2
119	57.	6	1	0	0	1	1	0	0	1	8	16	5
111	58.	14	1	0	2	3	1	0	0	1	0	18	0
110	59.	5	0	0	3	3	7	0	0	7	5	20	0
104	60.	14	1	0	4	5	2	0	0	2	5	26	0
98	61.	4	0	0	0	0	0	0	0	0	2	6	1
95	62.	3	0	0	1	1	1	0	0	1	4	9	3
120	63.	3	2	0	3	5	2	0	0	2	19	29	1
110	64.	13	1	0	4	5	1	0	1	2	9	29	1
90	65.	3	0	0	1	1	6	0	0	6	2	12	1
86	66.	0	0	0	2	2	0	0	1	1	13	16	8
111	69.	3	0	0	1	1	5	0	1	6	2	12	0
111	68.	4	0	0	1	1	0	0	0	0	2	7	2
98	69.	8	1	0	5	6	0	0	0	0	8	22	0
117	70.	8	1	0	11	12	0	0	0	0	6	26	1
108	71.	11	1	0	5	6	0	0	0	0	2	19	4
77	72.	2	0	0	4	4	7	0	8	15	5	26	5
101	73.	9	2	0	9	11	4	0	0	4	3	27	0
76	74.	13	1	0	1	2	5	0	0	5	9	29	1
93	75.	1	0	0	1	1	0	0	1	1	1	4	2
Total		242	38	0	117	155	89	0	167	106	181	667	93

Series II Pretest Control M-Girls
ILLUSTRATION-of-a-SPECIFIC IDEA

H.	Pupil	Specific IV	Specific V	Specific VI	Specific Total	General IV	General II	General III	General Total	Indefinite	Total	Unacceptable	
92	76.	5	0	0	0	0	0	0	0	3	8	9	
100	77.	4	3	0	6	9	2	0	0	26	21	1	
91	78.	6	2	0	0	2	2	0	0	29	19	2	
116	79.	4	0	0	0	0	1	0	0	17	12	0	
103	80.	2	1	0	0	1	4	0	0	45	12	0	
109	81.	8	2	0	1	3	1	0	0	15	17	2	
108	82.	2	1	0	0	1	0	0	0	05	8	0	
94	83.	8	1	0	0	1	2	0	0	25	16	1	
98	84.	8	0	0	0	0	2	0	0	211	13	5	
96	85.	4	0	0	0	0	5	0	0	52	11	2	
90	86.	7	0	0	13	13	11	0	0	113	34	1	
97	87.	4	0	0	0	0	0	0	0	02	6	2	
106	88.	0	0	0	0	0	0	4	0	45	9	12	
100	89.	10	1	0	2	3	3	0	0	37	23	0	
94	90.	5	0	0	1	1	0	0	0	02	8	0	
99	91.	3	0	0	0	0	4	0	3	72	12	3	
100	92.	6	0	0	3	3	7	0	0	74	20	1	
107	93.	4	0	0	9	9	0	0	0	010	23	0	
103	94.	7	0	0	5	5	4	0	0	45	21	7	
109	95.	20	2	0	7	9	4	0	0	49	42	2	
92	96.	1	0	0	0	0	3	2	0	51	7	8	
95	97.	6	2	0	3	5	2	0	0	23	16	4	
116	98.	10	0	1	9	10	0	0	0	03	23	2	
108	99.	8	1	0	7	8	3	0	0	39	28	1	
56	100.	0	0	0	1	1	4	0	2	63	10	1	
99	101.	6	1	0	1	2	0	0	0	16	14	1	
104	102.	0	0	0	0	0	9	0	0	91	10	1	
91	103.	6	0	0	5	5	8	0	2	108	29	1	
100	104.	0	1	0	0	1	3	0	3	63	10	2	
104	105.	4	0	0	0	0	10	0	0	103	17	6	
98	106.	3	1	0	0	1	2	0	0	22	8	0	
Total		154	19	0	73	92	96	6	10	112	149	307	77

Series II Pretest Control M-Girls

ILLUSTRATION-of-a-SPECIFIC IDEA

I.Q.	Pupil	Specific		General			Incompatible				Indefinite	Total	Unacceptable
		IV	V	VI	Total	IV	V	III	Total				
87	107	5	0	0	0	0	5	4	0	9	5	14	0
94	108	6	0	0	5	5	0	0	0	0	8	19	1
102	109	7	0	0	3	3	4	0	0	4	5	19	8
81	110	1	2	0	0	2	0	1	1	2	8	13	2
91	111	11	0	0	3	3	6	0	2	8	7	29	0
97	112	6	0	0	0	0	4	0	2	6	3	15	1
117	113	8	0	0	0	0	0	4	0	4	3	7	3
105	114	5	0	0	0	0	4	0	0	4	3	12	1
101	115	3	2	2	2	6	2	0	0	2	25	36	2
106	116	3	0	0	0	0	0	0	0	0	2	5	0
112	117	4	1	0	1	2	2	0	0	2	4	12	0
75	118	1	0	0	2	2	3	0	0	3	3	9	1
86	119	4	0	0	0	0	0	0	0	0	3	7	1
102	120	2	0	0	2	2	9	0	2	12	5	21	5
108	121	7	0	0	1	1	1	0	0	1	10	19	3
100	122	2	2	0	2	4	0	0	1	1	4	11	0
92	123	5	0	0	0	0	4	0	5	9	14	28	1
93	124	7	0	0	0	0	5	0	0	5	5	17	3
80	125	5	0	0	0	0	7	1	4	12	2	19	2
98	126	9	2	0	2	4	0	0	4	4	0	17	0
103	127	7	0	0	1	1	3	0	0	3	15	26	2
95	128	2	0	0	2	2	4	0	1	5	7	16	4
108	129	3	1	0	4	5	0	0	4	4	0	12	3
90	130	5	4	0	7	11	1	0	1	2	10	28	0
106	131	11	1	0	7	8	3	0	0	3	5	27	0
98	132	3	0	0	0	0	7	0	5	12	7	22	1
108	133	8	0	0	0	6	11	0	1	12	13	39	0
91	134	9	1	0	3	4	0	0	0	0	7	20	7
111	135	10	1	0	2	3	3	0	4	7	5	25	0
107	136	4	0	0	4	4	0	0	1	1	3	12	0
113	137	6	0	0	4	4	3	0	0	3	7	20	0
Total		156	17	2	63	82	91	10	39	140	198	576	43

Series I Pretest Experimental

ILLUSTRATION of a GENERALIZATION

ID	Pupil	General: Specific	VII	VIII	IX	Total	Inadequate: VIII	Incompatible: VII	VIII	IX	Total	Additive	Total	Unacceptable
102	1.	0	0	0	4	4	0	0	0	0	0	4	8	7
95	2.	0	0	0	0	0	1	,	,	,	3	1	5	1
94	3.	0	0	1	1	2	0	2	1	0	3	1	6	1
93	4.	0	0	1	1	2	0	0	0	0	0	0	2	1
89	5.	0	0	0	0	0	0	0	6	0	6	10	16	0
89	6.	0	1	0	5	6	0	1	0	3	4	4	14	0
102	7.	0	3	0	3	6	0	0	0	1	1	4	11	4
101	8.	0	3	0	4	7	0	1	0	0	1	2	10	5
101	9.	0	0	1	0	1	0	1	1	0	2	2	5	9
101	10.	0	1	0	2	3	0	0	0	0	0	3	6	2
81	11.	0	0	0	0	0	0	1	0	0	1	1	2	12
96	12.	3	0	0	9	4	0	0	3	0	3	3	13	0
105	13.	4	0	0	1	1	0	0	2	0	2	1	8	0
105	14.	2	0	0	0	0	0	0	1	0	1	2	5	5
81	15.	0	0	0	3	3	0	0	0	0	0	5	8	12
86	16.	0	1	0	2	3	0	1	0	2	3	1	7	0
91	17.	0	0	0	1	1	0	0	0	0	0	5	6	10
87	18.	0	0	0	1	1	0	0	0	0	0	0	1	14
83	19.	0	0	0	4	4	0	0	0	0	0	1	5	4
108	20.	1	0	0	9	9	0	0	0	1	1	4	15	0
92	21.	0	0	0	2	2	0	0	0	3	3	0	5	16
101	22.	0	0	0	2	2	0	2	4	3	9	0	11	3
101	23.	0	0	1	2	3	1	0	1	0	1	1	6	0
97	24.	1	1	0	0	1	0	0	2	0	2	2	6	1
99	25.	0	1	0	0	1	1	0	0	0	0	0	2	2
99	26.	0	0	0	0	0	1	0	1	2	3	0	4	2
103	27.	0	0	0	0	0	0	1	3	1	5	0	5	4
103	28.	0	0	1	0	1	1	0	0	0	0	5	7	4
104	29.	1	0	0	0	0	0	1	2	0	3	4	8	0
90	30.	0	0	0	0	0	2	0	0	0	0	4	6	2
104	31.	0	0	0	0	0	0	5	0	0	5	0	5	20
107	32.	1	2	1	1	4	0	0	1	0	1	1	7	0
110	33.	1	0	3	4	7	0	0	2	0	2	1	11	5
103	34.	0	0	3	0	3	0	0	1	0	1	0	4	11
100	35.	0	0	0	0	0	0	4	0	0	4	0	4	6
Boys		10	9	4	51	64	2	10	20	14	44	53	175	100
Girls		4	4	8	5	17	5	11	12	3	26	17	69	60
Total		14	13	12	56	81	7	21	32	17	70	72	244	160

Series III Retest Experimental 1270

ILLUSTRATION of a GENERALIZATION

I.Q.	Pupil	General: Specific	VII	VIII	IX	total	Inadequate	Incompatible: VII	VIII	IX	total	Predominant	Total	Unacceptable
103	1.	6	2	2	1	50	1	4	1	6	3	20	0	
95	2.	1	2	0	1	36	4	0	0	4	2	16	2	
94	3.	1	1	5	6	120	1	2	0	3	0	16	2	
93	4.	3	1	2	3	60	2	5	0	7	0	16	0	
89	5.	5	1	3	5	91	1	1	6	0	7	1	23	0
89	6.	7	2	0	2	40	1	0	0	4	5	0	16	0
102	7.	3	8	0	5	139	0	0	0	0	5	30	3	
101	8.	7	1	0	1	20	1	0	1	2	2	13	0	
101	9.	6	1	0	0	15	1	0	0	1	5	18	0	
101	10.	7	0	2	1	30	0	3	0	3	3	16	1	
81	11.	2	1	0	3	48	2	0	1	3	0	17	0	
96	12.	3	3	0	3	66	0	0	0	0	9	24	0	
105	13.	14	2	6	2	100	0	0	0	0	2	26	1	
105	14.	9	1	0	5	61	2	5	0	7	1	24	1	
81	15.	6	1	0	3	45	1	9	0	10	2	27	0	
86	16.	12	1	0	1	27	0	0	0	0	1	22	1	
91	17.	2	3	3	2	80	0	2	0	2	4	16	0	
87	18.	2	2	0	4	63	0	2	1	3	4	19	1	
83	19.	8	0	0	2	20	0	4	0	4	1	15	0	
108	20.	6	3	0	1	40	0	0	0	0	1	11	0	
92	21.	6	1	2	1	40	0	2	0	2	0	12	0	
101	22.	10	4	0	2	67	0	0	0	0	1	24	0	
101	23.	5	2	5	1	80	0	0	0	0	0	13	1	
97	24.	7	1	0	0	10	1	3	0	4	2	14	0	
99	25.	5	0	0	1	10	0	5	0	5	1	12	0	
99	26.	2	1	0	1	20	5	3	0	8	0	12	4	
103	27.	1	0	1	1	20	4	5	0	9	5	17	1	
103	28.	3	3	1	1	50	0	1	0	1	6	15	5	
104	29.	3	2	0	1	36	1	0	0	1	1	17	0	
90	30.	4	3	0	3	60	1	3	0	4	1	15	0	
104	31.	1	0	1	1	20	2	6	0	8	3	14	3	
109	32.	6	1	2	1	40	1	0	1	2	2	14	0	
111	33.	6	2	2	4	81	0	4	2	6	2	23	0	
103	34.	5	3	1	3	76	2	0	0	2	6	26	1	
100	35.	5	0	4	5	95	3	1	0	4	0	18	0	
Boys		131	43	30	55	128	51	17	44	8	69	47	426	11
Girls		48	16	12	22	50	12	20	31	3	54	29	193	14
Total		179	59	42	77	178	63	37	75	11	123	76	619	25

Series III Pretest Control A - Boys

ILLUSTRATION of a GENERALIZATION

I.Q.	Pupil	Specific	General				Inadequate	Incompatible				Indefinite	Total	Unacceptable
			VII	VIII	IX	Total	VIII	VII	VIII	IX	Total	A		
93	1.	0	1	0	0	1	0	1	2	0	3	3	7	14
107	2.	0	0	2	5	7	2	3	2	0	5	3	17	8
101	3.	0	2	1	0	3	0	1	2	0	3	1	7	8
134	4.	0	1	0	7	8	1	3	6	0	9	1	19	6
93	5.	0	0	0	0	0	2	0	0	0	0	2	4	8
97	6.	0	0	0	0	0	0	0	0	0	0	3	3	19
116	7.	0	2	1	4	7	4	0	0	2	2	1	14	1
92	8.	0	0	0	0	0	0	0	0	0	0	3	3	18
82	9.	0	0	0	0	0	0	0	0	0	0	1	1	3
90	10.	0	0	0	0	0	1	0	0	1	1	3	5	9
115	11.	2	1	0	4	5	5	3	0	0	3	0	15	0
103	12.	2	0	2	0	2	0	0	2	2	4	3	11	4
86	13.	0	0	0	0	0	0	0	2	2	4	3	7	0
98	14.	0	0	0	2	2	0	6	5	2	13	2	17	0
107	15.	3	3	0	3	6	2	0	0	3	3	0	14	4
111	16.	0	0	0	3	3	0	0	3	0	3	4	10	6
92	17.	0	0	0	0	0	0	0	0	0	0	1	1	26
107	18.	0	0	0	0	0	0	2	0	0	2	0	2	4
103	19.	0	0	2	0	2	0	0	1	0	1	4	7	1
101	20.	0	0	0	0	0	0	0	0	2	2	3	5	12
85	21.	0	0	0	0	0	0	6	7	0	13	1	14	6
94	22.	0	0	0	0	0	1	1	2	0	3	4	8	7
105	23.	0	0	0	5	5	0	0	4	0	4	0	9	7
97	24.	0	0	0	0	0	0	1	1	0	2	0	2	1
90	25.	0	0	0	0	0	0	0	1	0	1	4	5	13
94	26.	0	0	0	0	0	0	0	0	0	0	0	0	16
90	27.	0	1	0	2	3	0	1	2	0	3	4	10	4
89	28.	0	0	0	0	0	0	0	1	0	1	7	8	21
86	29.	0	0	0	0	0	0	0	0	1	1	1	2	10
95	30.	2	7	0	0	7	0	0	2	3	5	3	17	1
95	31.	0	0	0	0	0	0	0	2	1	3	6	9	5
110	32.	0	0	0	1	1	0	0	0	0	0	2	3	6
87	33.	0	0	0	1	1	0	0	0	0	0	2	3	5
110	34.	0	0	0	0	0	0	0	0	0	0	4	4	9
104	35.	0	0	0	0	0	0	0	0	0	0	1	1	11
Totals		9	18	8	39	63	18	28	47	19	94	80	264	266

Series I Pretest Control A-Girls
ILLUSTRATION of a GENERALIZATION

IQ	Pupil	General: Specific	VII	VIII	IX	Total	Inadequate	Incompatible: VII	VIII	IX	Total	Creative	Total	Unacceptable
82	36.	0	1	0	0	1	0	0	0	0	0	0	1	4
82	37.	0	0	0	0	0	0	0	2	0	2	1	3	9
118	38.	0	4	0	1	5	0	0	4	0	4	5	14	4
79	39.	0	0	0	0	0	0	0	1	0	1	1	2	4
87	40.	0	0	0	0	0	2	1	1	0	2	7	11	3
130	41.	0	0	0	8	8	3	0	0	0	0	11	22	17
125	42.	2	0	0	1	1	1	0	3	0	3	7	14	1
82	43.	0	0	0	0	0	0	0	0	0	0	0	0	15
99	44.	0	0	0	0	0	0	2	0	0	2	0	2	5
100	45.	0	0	0	0	0	0	0	3	0	3	4	7	19
115	46.	0	0	0	5	5	3	0	0	0	0	1	9	6
87	47.	0	0	0	0	0	0	0	3	0	3	2	5	6
95	48.	0	0	0	0	0	0	0	0	0	0	0	0	23
87	49.	0	0	0	0	0	0	0	3	0	3	3	6	11
80	50.	0	0	0	0	0	0	0	0	0	0	0	0	14
101	51.	0	0	0	0	0	0	4	2	0	6	0	6	0
95	52.	0	0	0	0	0	0	0	0	0	0	1	1	6
122	53.	4	0	1	0	1	0	1	0	1	2	1	8	0
105	54.	0	0	0	0	0	2	2	2	0	4	3	9	2
108	55.	0	0	0	0	0	0	0	4	0	4	3	7	6
102	56.	0	0	0	0	0	0	1	2	0	3	2	5	1
111	57.	4	0	0	1	1	0	0	1	0	1	0	6	1
90	58.	0	0	0	0	0	0	9	7	8	24	1	25	0
119	59.	1	0	0	1	1	0	0	0	0	0	7	9	0
105	60.	0	0	0	0	0	0	0	0	0	0	5	5	11
101	61.	0	3	0	3	6	0	0	7	0	7	1	14	0
97	62.	0	0	0	0	0	0	0	1	0	1	4	5	4
103	63.	0	0	0	0	0	0	0	2	0	2	2	4	8
101	64.	0	0	0	0	0	0	0	0	0	0	2	2	17
104	65.	0	0	0	1	1	0	0	3	0	3	4	8	2
98	66.	0	0	0	0	0	0	5	1	0	6	2	8	3
89	67.	0	0	0	0	0	0	0	0	0	0	3	3	12
101	68.	0	0	1	0	1	0	0	1	0	1	1	3	8
103	69.	2	2	0	1	3	1	0	0	0	0	9	15	2
104	70.	0	0	0	0	0	1	0	1	0	1	11	13	3
99	71.	0	0	0	2	2	0	0	2	0	2	3	7	0
Total		13	10	2	24	36	13	25	56	9	90	107	259	227

Series III Retest Control A-Boys

ILLUSTRATION of a GENERALIZATION

G. H.	Pupil	Specific	General VII	General VIII	General IX	General Total	Inadequate	Incompatible VII	Incompatible VIII	Incompatible IX	Incompatible Total	Indefinite	Total	Unaccept-able
93	1.	0	0	0	3	3	0	0	36	1	37	10	50	14
107	2.	0	1	0	6	13	0	3	11	0	14	5	32	5
101	3.	3	2	0	11	13	10	2	0	0	2	9	37	3
134	4.	13	5	0	2	7	0	0	6	0	6	2	28	0
93	5.	0	0	0	14	14	0	0	0	0	0	12	26	16
97	6.	0	0	0	0	0	0	0	0	0	0	0	0	16
116	7.	4	8	0	7	15	0	0	1	0	1	2	22	1
92	8.	0	0	0	1	1	0	0	0	0	0	5	6	1
82	9.	0	0	0	1	1	0	0	5	0	5	5	10	1
90	10.	0	1	0	13	14	0	0	0	1	1	6	21	3
115	11.	6	3	0	2	5	1	1	0	0	1	7	20	0
103	12.	0	0	0	1	1	0	0	0	0	0	3	4	9
86	13.	1	0	0	1	1	0	0	0	1	1	2	5	0
98	14.	0	0	0	9	9	0	5	2	0	7	3	19	0
107	15.	7	5	2	2	9	0	0	0	0	0	4	20	1
111	16.	0	0	0	10	10	0	0	1	0	1	11	22	11
92	17.	0	0	0	10	10	0	0	1	0	1	14	25	26
107	18.	0	0	0	3	3	0	0	0	0	0	11	14	18
103	19.	0	0	0	2	2	0	0	0	0	0	3	5	2
101	20.	0	0	0	0	0	4	0	1	0	1	6	11	7
85	21.	0	0	0	0	0	0	3	1	0	4	6	10	8
94	22.	1	0	0	0	0	0	0	6	0	6	6	13	2
105	23.	0	0	0	10	10	1	0	0	0	0	14	25	2
97	24.	0	0	0	27	27	0	0	4	0	4	10	41	0
90	25.	0	4	0	0	4	0	0	2	0	2	5	11	3
94	26.	0	0	0	2	2	0	8	0	0	8	6	16	17
91	27.	0	0	0	3	3	0	2	0	0	2	13	18	8
89	28.	0	0	0	2	2	0	2	0	0	2	12	16	5
86	29.	0	0	0	3	3	0	5	0	0	5	3	11	1
95	30.	1	0	0	4	4	0	4	7	0	11	6	22	3
90	31.	0	0	0	6	6	2	0	0	0	0	4	12	1
110	32.	0	0	0	0	0	0	0	0	0	0	7	7	10
87	33.	0	1	0	1	2	0	0	0	0	0	0	2	7
110	34.	0	0	0	0	0	0	0	0	0	0	6	7	10
104	35.	0	0	0	8	8	0	0	0	0	0	8	16	14
Total		36	36	62	164	202	18	35	84	3	122	226	604	217

Series III Retest Control A-Girls

ILLUSTRATION-of-a-GENERALIZATION

IQ	Pupil	General						Incompatible						
		Specific	VII	VIII	IX	Total	Undifferentiated	VII	VIII	IX	Total	Indefinite	Total	Unacceptable
82	36.	0	0	0	0	0	0	1	4	1	6	4	10	1
82	37.	0	0	0	0	0	0	0	2	0	2	6	8	2
118	38.	6	0	0	0	0	0	2	2	4	8	5	19	0
79	39.	0	0	0	1	1	0	0	0	0	0	5	6	0
87	40.	0	0	0	11	11	0	0	0	0	0	10	21	15
130	41.	0	0	0	6	6	0	7	4	1	12	8	26	3
125	42.	0	4	0	2	6	1	1	0	2	3	10	20	0
82	43.	0	0	0	0	0	0	0	0	0	0	5	5	7
99	44.	0	0	0	0	0	0	0	4	0	4	4	8	16
100	45.	0	0	0	1	1	0	0	3	0	3	9	13	23
113	46.	0	0	0	3	3	0	0	0	0	0	5	8	7
89	47.	0	0	0	0	0	0	3	1	4	8	3	11	1
95	48.	0	0	0	0	0	4	0	2	0	2	3	9	12
89	49.	0	0	0	0	0	0	0	5	2	7	0	7	57
80	50.	0	0	0	0	0	0	0	5	1	6	1	7	2
101	51.	0	0	0	5	5	0	2	1	0	3	7	15	3
93	52.	0	0	0	5	5	0	8	3	1	12	4	21	5
122	53.	0	0	0	0	0	0	0	0	0	0	8	8	9
105	54.	0	0	0	5	5	0	0	2	0	2	4	11	11
108	55.	0	0	0	8	8	0	0	0	0	0	5	13	1
102	56.	0	0	0	5	5	1	0	2	5	7	8	21	0
111	57.	1	0	0	10	10	3	0	3	0	3	12	29	10
90	58.	0	0	0	0	0	0	0	2	5	7	5	12	13
119	59.	0	4	0	2	6	0	2	9	0	11	0	17	0
105	60.	1	0	0	3	3	1	0	2	0	2	2	9	5
101	61.	0	5	0	0	5	0	0	1	0	1	18	24	4
97	62.	0	0	0	6	6	0	1	5	0	6	8	20	2
103	63.	0	0	0	11	11	0	0	4	0	4	10	25	3
101	64.	3	0	0	3	3	0	8	9	1	18	3	27	2
104	65.	0	1	0	1	2	1	0	1	0	1	5	9	1
98	66.	0	2	0	1	3	0	1	0	0	1	3	7	6
87	67.	0	0	0	0	0	0	0	4	0	4	3	7	6
101	68.	1	1	0	0	1	0	0	2	2	4	3	9	2
103	69.	4	6	0	1	7	1	1	4	1	6	9	27	1
104	70.	2	0	0	3	3	0	0	3	0	3	9	17	2
99	71.	0	0	0	2	2	0	0	2	0	2	13	17	2
Total		18	23	0	94	117	12	37	91	30	158	217	522	230

Series III Pretest Control m-Boys

ILLUSTRATION-of-a-GENERALIZATION

Gi A	P2 B	Specific C	General XII	XIII	IX	Total	Acceptable	Incompatible III	VIII	XI	Total	Questionable	Total	Unacceptable
121	1.	0	0	1	0	0	0	0	2	0	2	2	4	3
99	2.	0	0	0	0	0	0	0	1	0	1	7	8	7
94	3.	0	0	0	0	0	0	0	2	0	2	1	3	6
84	4.	1	0	0	0	0	1	0	2	0	2	2	7	3
94	5.	0	0	0	0	0	0	0	1	0	1	5	6	6
97	6.	1	0	0	0	0	0	0	0	0	0	1	2	2
85	7.	0	0	0	0	0	0	0	0	0	0	1	1	9
94	8.	0	0	0	0	0	0	0	2	2	4	2	6	4
98	9.	0	2	0	5	7	1	1	1	0	2	1	11	2
94	10.	0	0	0	2	2	0	0	2	0	2	1	5	5
85	11.	0	0	0	0	0	0	0	0	0	0	0	0	4
91	12.	1	0	0	0	0	0	0	2	0	2	1	4	2
80	13.	0	0	0	0	0	0	1	2	0	3	5	8	4
101	14.	0	0	0	0	0	0	0	0	0	0	3	3	26
101	15.	0	0	0	0	0	0	0	2	0	2	1	3	0
87	16.	0	0	0	0	0	0	0	0	0	0	0	0	4
116	17.	0	0	2	7	9	2	0	1	0	1	13	25	1
125	18.	0	0	0	0	0	0	0	0	0	0	2	2	2
99	19.	0	0	0	0	0	0	0	2	0	2	1	3	12
79	20.	0	0	0	0	0	0	0	0	0	0	0	0	3
88	21.	0	0	0	0	0	0	0	0	0	0	0	0	0
94	22.	0	0	0	0	0	0	4	2	0	6	1	7	6
99	23.	0	0	0	4	4	0	0	5	0	5	6	15	1
95	24.	0	0	0	0	0	0	0	1	0	1	4	5	2
122	25.	1	4	0	10	14	0	0	5	0	5	0	20	1
104	26.	0	0	0	0	0	0	0	2	0	2	6	8	16
95	27.	0	0	0	0	0	0	0	0	0	0	0	0	4
85	28.	0	0	0	0	0	0	0	0	0	0	0	0	1
113	29.	0	0	0	1	1	0	0	0	0	0	2	3	3
112	30.	3	0	0	3	3	0	1	0	0	1	0	7	1
104	31.	1	3	0	2	5	0	0	3	3	6	0	12	1
96	32.	0	0	0	0	0	0	0	0	0	0	4	4	8
103	33.	0	0	0	1	1	0	1	8	0	9	4	14	2
121	34.	1	0	0	0	0	0	0	4	4	8	2	11	0
99	35.	0	0	0	0	0	0	0	0	0	0	0	0	1
95	36.	0	0	0	0	0	1	0	0	0	0	1	2	9
105	37.	0	0	0	2	2	0	5	5	0	10	1	13	3
105	38.	0	2	0	4	6	0	2	2	0	4	2	12	0
Total		9	11	2	41	54	5	15	59	9	83	82	234	164

Series III Pretest Control M-Boys 1330

ILLUSTRATION 03 - 2 - GENERALIZATION

I.Q.	Pupil	General					Irrelevant						Total	Unacceptable
		Specific	VII	VIII	IX	Total	Specific	VII	VIII	IX	Total	Specific		
95	39.	0	0	0	0	0	0	1	0	0	1	0	1	8
127	40.	0	0	0	0	0	0	0	0	0	0	1	1	9
81	41.	0	0	0	0	0	0	0	0	0	0	1	1	1
83	42.	0	0	0	0	0	0	3	4	0	7	5	12	3
106	43.	0	2	0	0	2	0	2	0	0	2	7	11	0
80	44.	1	2	0	3	5	0	0	2	0	2	5	13	1
99	45.	0	0	0	0	0	0	0	0	0	0	0	0	3
97	46.	2	0	0	0	0	0	0	1	0	1	1	4	0
102	47.	1	0	0	0	0	0	0	0	0	0	2	3	0
108	48.	0	0	0	0	0	0	0	2	0	2	0	2	2
95	49.	0	0	0	0	0	0	0	0	0	0	0	0	3
92	50.	0	1	0	0	1	0	0	4	9	13	3	17	1
86	51.	0	1	0	2	3	0	2	3	0	5	2	10	1
110	52.	8	2	0	0	2	0	2	4	0	6	3	19	2
76	53.	0	0	0	4	4	0	0	1	0	1	0	5	13
102	54.	0	0	0	0	0	0	0	1	0	1	0	1	3
98	55.	0	0	0	0	0	0	0	2	0	2	0	2	0
82	56.	0	0	0	0	0	0	0	0	0	0	0	0	2
119	57.	0	0	0	1	1	0	0	2	0	2	7	10	1
111	58.	0	1	0	4	5	0	0	1	0	1	0	6	0
110	59.	0	0	0	0	0	0	0	0	0	0	1	1	0
104	60.	0	0	0	1	1	0	0	0	0	0	6	7	6
98	61.	0	0	0	0	0	0	0	1	0	1	0	1	4
95	62.	0	0	0	0	0	0	0	1	0	1	0	1	5
120	63.	1	5	0	1	6	0	6	3	0	3	3	13	2
110	64.	2	2	0	0	2	0	0	3	0	3	2	9	1
90	65.	0	0	0	0	0	0	0	0	0	0	2	2	3
86	66.	0	0	0	0	0	0	0	0	0	0	0	0	1
111	67.	0	0	0	0	0	0	0	0	0	0	2	2	3
111	68.	0	0	0	0	0	0	0	0	0	0	1	1	0
98	69.	0	0	0	1	1	0	0	0	7	7	3	11	0
117	70.	0	1	1	0	2	1	1	0	0	1	3	7	0
108	71.	3	3	0	0	3	0	1	1	0	2	1	9	0
77	72.	0	0	0	0	0	0	0	0	2	2	2	4	11
101	73.	0	0	0	2	2	0	0	0	3	3	1	6	5
76	74.	0	0	0	2	2	0	0	4	3	7	2	11	3
93	75.	0	0	0	0	0	0	0	0	2	2	0	2	1
Total		15	20	1	21	42	1	12	40	26	78	66	205	98

Series III Pretest Control M-Girls

ILLUSTRATION-of-a-GENERALIZATION

I.Q.	Pupil	Specific					Central					Made Quote		Incompatible				Adequate		
		VII	VIII	IX	Total		VII	VIII	IX	Total		VII	VIII	IX	Total					
92	76.	1	0	0	0	0	0	1	2	0	3	3	7	1						
100	77.	2	0	0	2	2	0	2	3	0	5	1	10	1						
91	78.	3	1	0	1	2	0	1	3	0	4	0	9	0						
116	79.	0	0	0	1	1	0	0	2	0	2	0	3	7						
103	80.	0	0	0	0	0	0	1	3	0	4	0	4	8						
109	81.	1	0	0	0	0	0	0	0	0	0	2	3	5						
101	82.	0	0	0	1	1	0	0	2	0	2	0	3	7						
94	83.	1	0	0	1	1	0	3	1	0	4	1	7	4						
98	84.	0	0	0	0	0	0	0	3	0	3	3	6	11						
96	85.	0	0	0	0	0	0	0	0	0	0	0	0	5						
90	86.	1	0	0	0	0	0	0	2	0	2	0	3	4						
97	87.	0	1	1	0	2	0	1	0	1	2	0	4	0						
106	88.	0	0	0	0	0	0	0	2	0	2	3	5	3						
100	89.	3	3	0	1	4	0	0	2	0	2	1	10	1						
94	90.	0	0	0	0	0	0	0	2	0	2	1	3	4						
99	91.	0	1	0	0	1	0	3	1	0	1	7	12	0						
100	92.	0	0	0	0	0	0	0	3	0	3	6	9	0						
107	93.	3	0	0	0	0	0	0	0	0	0	0	3	0						
103	94.	0	0	0	0	0	0	0	1	0	1	0	1	15						
109	95.	0	0	0	2	2	0	0	0	0	0	5	7	6						
92	96.	0	0	0	3	3	0	0	3	0	3	8	14	4						
95	97.	0	1	0	4	5	0	0	4	0	4	5	14	0						
116	98.	0	0	0	1	1	0	0	1	0	1	7	9	10						
105	99.	0	3	0	0	3	0	1	0	0	1	2	6	3						
56	100.	0	0	0	0	0	0	0	0	0	0	1	1	23						
99	101.	0	0	0	0	0	0	0	2	0	2	3	5	1						
104	102.	0	0	0	0	0	0	2	2	0	2	0	2	4						
91	103.	0	0	0	1	1	0	0	3	0	3	2	6	21						
100	104.	0	1	0	0	1	0	1	1	0	2	3	6	5						
104	105.	0	0	0	0	0	8	8	0	0	8	0	16	0						
Total		15	11	1	18	30	8	22	48	1	71	64	185	135						

Series III Pretest Control M-Girls

ILLUSTRATION of a GENERALIZATION 1350

I.Q.	Pupil	Specific	General VII	General VIII	General IX	General Total	Inadequate VII	Inadequate VIII	Inadequate IX	Inadequate Total	Incompatible	Indefinite	Total	Unacceptable
98	106	0	0	0	2	2	0	0	0	0	4	6	3	
97	107	0	0	0	0	0	0	0	0	0	0	0	20	
94	108	2	0	0	2	2	0	0	0	0	0	4	3	
102	109	0	0	0	0	0	0	0	0	0	1	1	11	
81	110	0	0	0	0	0	0	0	0	0	2	2	3	
91	111	0	0	0	0	0	0	3	0	3	0	3	4	
97	112	0	0	0	0	0	0	1	0	1	5	6	4	
117	113	0	0	0	0	0	2	4	0	6	0	6	0	
105	114	0	0	0	1	1	0	0	0	0	1	2	6	
101	115	1	1	0	1	2	2	3	0	2	5	3	13	8
106	116	0	0	0	1	1	0	0	1	1	0	2	1	
112	117	0	1	0	4	5	0	0	0	0	6	11	0	
75	118	0	0	0	0	0	0	2	0	0	2	4	6	0
86	119	0	0	0	0	0	0	0	0	0	0	0	0	5
102	120	0	0	0	0	0	0	1	4	0	5	3	8	7
108	121	0	0	0	0	0	0	0	3	0	3	0	3	3
100	122	0	0	0	0	0	1	0	0	0	0	1	2	5
92	123	0	0	0	0	0	0	1	4	0	5	0	5	12
93	124	0	0	0	1	1	0	0	2	0	2	3	6	5
80	125	0	0	0	0	0	0	3	3	0	6	2	8	12
98	126	0	0	0	0	0	0	0	0	0	0	0	0	10
103	127	0	0	0	1	1	0	0	0	0	0	1	2	0
95	128	0	0	0	1	1	0	0	0	0	0	4	5	6
108	129	0	0	0	0	0	0	0	2	0	2	0	2	0
90	130	0	0	0	0	0	0	1	0	0	1	0	1	6
106	131	0	0	0	0	0	0	0	0	0	0	0	0	12
98	132	0	0	0	0	0	0	0	2	0	2	3	5	1
108	133	0	0	0	0	0	0	0	2	0	2	6	8	1
91	134	0	0	0	0	0	0	0	3	0	3	5	8	4
111	135	1	3	0	2	5	0	1	3	1	5	0	11	8
100	136	1	2	0	0	2	0	0	2	0	2	2	7	0
113	137	0	0	0	1	1	1	0	2	0	2	2	6	6
Total		5	8	0	16	24	4	14	41	3	58	58	149	18

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